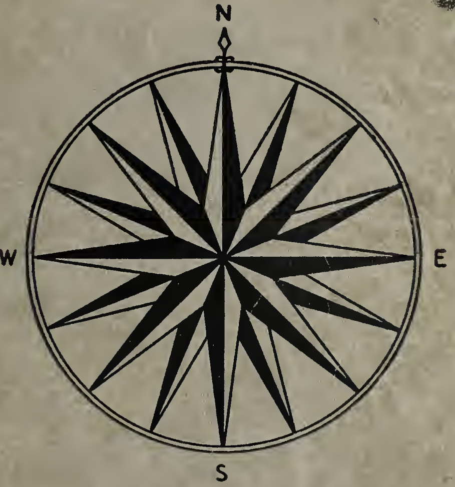
12

ALBERTA GEOGRAPHY WORKBOOK



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LIMITED

GEOGRAPHY WORKBOOK FOR ALBERTA

AUTHORIZED BY THE MINISTER OF EDUCATION
FOR USE IN THE PUBLIC SCHOOLS
OF ALBERTA

TORONTO
THE EDUCATIONAL BOOK COMPANY, LIMITED
1930

A DAILY RECORD

For each school day in a month fill in the following record. The *velocity* of the wind may be indicated as gentle, moderate, high, very high, etc. *See pages 39 and 40.*

Climate

Date	Rain or Snowfall		Temperature	Wind	
	Kind	Amount		Direction	Velocity

Compare rain with wind in forecasting weather.

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Start work with N.A. model.

GEOGRAPHY WORKBOOK

+ Pupil's exercise book. - teacher supervises work.

GENERAL GEOGRAPHY

HOW THE EARTH GREW

Men think that the earth was once a great ball of boiling rock. It must have been a fearsome sight—great waves of melted rock rolling around the earth and tall flames shooting into the sky.

Ages passed, and the earth began to cool. As it cooled, the rock hardened, forming a crust all over the outside. The earth cooled more and more, and the crust grew thicker and thicker. Now the crust is about a hundred miles thick.

Inside the crust the great ball of the earth was still very hot. The weight of the crust pressed upon the hot ball, keeping it still and solid, but wherever the boiling rock, which we call *lava,* could find a crack in the crust, it burst through and flowed in streams out over the crust. Cracks in the earth's crust out of which lava pours are called *volcanoes.*

In the ages when the earth's crust was still thin, there were many cracks in it. Hundreds of volcanoes threw up millions of tons of lava, which piled up on top of the crust, cooled, and hardened. In some parts of the earth there were thousands of volcanoes. The lava piled up and piled up and piled up. The weight of it was so great that the crust sank under it. This left great hollows in the crust. Water ran into these hollows and made the *oceans.* In other parts of the earth there were not so many volcanoes. There, less lava was thrown out, and the crust did not sink down. These high places in the earth's crust are called *continents.*

THE EARTH BECOMES THE HOME OF MAN

At first the continents were all just bare, dry rock. This rock was very rough. In some places deep jagged cracks cut through it. In other places there were lumps and hummocks of hardened lava. In still other places the crust of the earth rose in high ridges, forming hills or mountains.

When the damp air touched this cool rock, the water came out of the air. It began to rain. The raindrops beat upon the rocks. They slowly wore them away and ground them into sand and soil. Running down the hillsides, the water carried the soil with it and spread it out over the lower parts of the continents. The sun and the air worked upon the soil and made it fit for growing things.

As the waterdrops ran along, they joined to make creeks and rivers. The rivers drained the land, carrying the water down to the oceans. They gouged out deep valleys in the continents. They spread out soil in the level places, making plains. They filled the deepest hollows in the continents with water, making lakes. The lakes acted as reservoirs to hold the extra water in times of flood.

The crust of the earth had now both continents and oceans. The continents were covered with hills and valleys. There were rivers and lakes to carry off the water. The plains were overlaid with soil fit for working. The earth was ready to become the home of man.

THE OCEANS

The great weight of the piled-up lava made the crust of the earth sink in five places. There were five great hollows, which, when filled with water, made five great oceans. These five oceans cover three-quarters of the earth's crust. Let children infer. Use globe.

THE SAILOR'S GAME

Study the map of the world and complete these sentences by placing the right word in the space left for it.

1. The largest ocean is called the________________
2. The second largest ocean is called the________________
3. The smallest ocean is called the________________
4. The most northerly ocean is called the________________
5. The most southerly ocean is called the________________
6. The Atlantic Ocean is larger than the________________
7. It is smaller than the________________
8. The Arctic Ocean is north of the________________Ocean.
9. The Pacific Ocean is________________of the Antarctic Ocean.
10. The Atlantic Ocean is________________ of the Pacific Ocean.
11. The Atlantic Ocean is________________of the Indian Ocean.
12. The Indian Ocean is________________ of the Pacific Ocean.
13. The Antarctic Ocean is________________of the Indian Ocean.
14. The sailor is sailing eastward across the Indian Ocean. He wishes to reach the Arctic Ocean. To do so he must sail through the________________Ocean.
15. The sailor is sailing westward across the Indian Ocean. To reach the Arctic he must cross the________________Ocean.
16. The sailor is crossing the Antarctic Ocean. He can reach the Arctic Ocean by sailing across the________________Ocean; or by sailing across the________________Ocean. But he cannot reach it by sailing across the________________Ocean.

THE CONTINENTS

The oceans cover most of the crust of the earth. Only one-quarter of the space is left for the continents. This space is divided into six continents.

A JOURNEY AROUND THE WORLD

If we were going on a journey around the world, we should need to know the names of the continents to be visited. Study the map of the world and write down the names of the continents. Begin with the largest and end with the smallest.

1. ____________________ 2. ____________________

3. ____________________ 4. ____________________

5. ____________________ 6. ____________________

Write the correct answer after each of these questions:

1. Which is the largest continent?____________________
2. What direction is it from Europe?____________________
3. What direction is Europe from Africa?____________________
4. What direction is Africa from Australia?____________________
5. Which is the coldest continent?____________________
6. What direction is it from Africa?____________________
7. What ocean lies between Africa and Australia?____________________
8. What ocean lies north of Asia?____________________
9. In what continent do we live?____________________
10. In what hemisphere is North America?____________________
11. What ocean do we cross in going from North America to Europe?____________________
12. What direction is North America from Asia?____________________
13. Which is larger, North America or South America?____________________
14. What ocean lies west of North America?____________________
15. What ocean lies north of North America?____________________

NORTH AMERICA

Cross out the wrong word in these sentences. Make each sentence say what you think it should say.

1. We live in $\left(\substack{\text{NORTH}\\ \text{SOUTH}}\right)$ America.
2. North America is $\left(\substack{\text{A CONTINENT}\\ \text{AN ISLAND}}\right)$.
3. North America is $\left(\substack{\text{EAST}\\ \text{NORTH}}\right)$ of South America.
4. The Pacific Ocean is $\left(\substack{\text{EAST}\\ \text{WEST}}\right)$ of North America.
5. North America has the $\left(\substack{\text{ATLANTIC}\\ \text{INDIAN}}\right)$ Ocean east of it.
6. North America is $\left(\substack{\text{WEST}\\ \text{EAST}}\right)$ of Asia.
7. North America is $\left(\substack{\text{WEST}\\ \text{EAST}}\right)$ ~~of~~ Europe.
8. North America is $\left(\substack{\text{NORTH-WEST}\\ \text{SOUTH-EAST}}\right)$ of Africa.
9. North America is touched by $\left(\substack{\text{TWO}\\ \text{THREE}}\right)$ oceans.
10. North America is in the $\left(\substack{\text{EASTERN}\\ \text{WESTERN}}\right)$ hemisphere.
11. North America is the $\left(\substack{\text{SECOND}\\ \text{THIRD}}\right)$ largest of the continents. use onion skin on globe.

12. North America is $\left(\substack{\text{BROADER}\\\text{NARROWER}}\right)$ in the north.

13. North America is joined to South America by $\left(\substack{\text{AN ISTHMUS}\\\text{A STRAIT}}\right)$.

14. North America is separated from Europe by the $\left(\substack{\text{ATLANTIC}\\\text{ARCTIC}}\right)$ Ocean.

15. It is separated from Australia by the $\left(\substack{\text{PACIFIC}\\\text{ATLANTIC}}\right)$ Ocean.

16. Most of America gets $\left(\substack{\text{ENOUGH}\\\text{NOT ENOUGH}}\right)$ rainfall.

17. North America is $\left(\substack{\text{LARGER}\\\text{SMALLER}}\right)$ than South America.

18. There are mountains in the $\left(\substack{\text{WEST}\\\text{SOUTH}}\right)$ of North America.

19. There $\left(\substack{\text{ARE}\\\text{ARE NOT}}\right)$ long rivers in North America.

20. The long rivers $\left(\substack{\text{FLOW}\\\text{DO NOT FLOW}}\right)$ west.

21. The long rivers $\left(\substack{\text{FLOW}\\\text{DO NOT FLOW}}\right)$ north and east and south.

22. They do not flow west because the mountains are $\left(\substack{\text{NEAR}\\\text{FAR}}\right)$ from the west coast.

23. When we note the direction in which the long rivers flow, we know that most of the land slopes towards the $\left(\substack{\text{ATLANTIC}\\\text{PACIFIC}}\right)$ Ocean.

CANADA

Study the map and place the right word in the space left for it. Make each sentence say what you think it should say.

1. Canada [illegible] the continent of ________________.

2. Our country covers the northern ________________ of North America.

3. Canada has the ________________ Ocean on the east.

4. It has the ________________ Ocean on the north.

5. It has the ________________ Ocean on the west.

6. It has the ________________ ________________ on the south.

7. Along the west coast of Canada lie the ________________ Mountains.

8. Because of this, Canada has ____________ rivers west of the mountains and ____________ rivers east of the mountains.

9 Most of our country slopes towards the ____________, ____________ ____________, and the ________________ Ocean, ?

10. Canada has, therefore, ____________ great rivers.

11. The great river flowing east into the Atlantic Ocean is called the ________________.

12. The great river flowing north-east into Hudson Bay is called the ________________.

13. The great river flowing north into the Arctic Ocean is called the ________________.

14. We get ________________ rain in most parts of Canada. ?

15. A ______ lar ______ part of our country is fit for farming. ?

neighbors, preceded by globe study

THE PROVINCE OF ALBERTA

LOCATION AND AREA

1. Tell where Alberta is.

Alberta is a ______________ in the Dominion of ______________, which is in the continent of ______________. Canada is in the ______________ part of the ______________ hemisphere, having the ______________ Ocean on the north, the ______________ Ocean on the west, and the ______________ Ocean on the east. The country called the ______________ lies to the ______________ of Canada. Alberta is one of the four ______________ provinces in Canada, the names of the other three being ______________, ______________, ______________.

The province to the west is ______________, and that to the east is ______________. At the north that portion of Canada bordering on Alberta is called the ______________ District, which is a part of ______________. On the south the state of ______________ in the country of ______________ ______________ is the neighbor of Alberta.

2. Write your full address as follows:

Post Office ______________
Province ______________
Country ______________
Continent ______________
Division of Continent ______________
Hemisphere ______________
Hemisphere ______________

You may have wondered how people can tell just where Canada leaves off and where the United States begins. How do we know where to draw the line which separates Alberta from Saskatchewan? Look at the map of the world and notice the lines drawn on it. There are lines running east and west and other lines running north and south. Each of these lines is numbered. The east and west lines are numbered from the equator, which is marked 0. The north and south lines are numbered from the one which runs through Greenwich, England. The Greenwich line is numbered 0. By counting lines north or south of the equator and then counting lines east or west of the Greenwich line, one can tell just where a place is located on the globe. Western Canada begins at the 49th line north of the equator. Our province of

Long. & Lat.

Alberta lies between the 49th and the 60th lines north of the equator, and between the 110th and the 120th lines west of Greenwich. You can see that these lines are very useful. Measuring by them, it is quite easy to find the location of any place you wish. Farms and roadways, as well as countries, provinces, and towns, are laid out by measuring from these lines.

3. Study the map and tell:

What is the number of the line forming the eastern boundary of Alberta?________ the northern boundary?________ a portion of the western boundary?________ the southern boundary?________

These lines are said to measure degrees. How many degrees wide is Alberta on the north boundary?________ and on the south boundary?________

How many degrees are there between the north and the south boundaries of the province?________

4. From the globe find the names of five places east of Alberta that are between the same east and west lines as those that enclose the province:

(1)________ (2)________ (3)________

(4)________ (5)________

5. The boundaries of Alberta are________ lines, except in the ________ corner from a point near the middle of the________ boundary to a point near the________ of the________ boundary. Connecting these two points is an________ line made by the________ mountain range. This line is made by joining the highest points in this range and is called the________ of land or the Great________. West of this line the land slopes in a general direction towards the________ Ocean, while east of it Alberta water flows in most cases in an ________ direction and finally reaches the________ Ocean.

A GAME FOR GEOGRAPHERS

Pretend that you are a geographer. You must play this game very carefully. Geographers are extremely accurate people. They measure exactly.

1. In general the shape of Alberta is________ with the corner cut off.

Measure the boundary lines with your ruler. One inch on the colored map in the centre of the book stands for________ miles on the earth.

The eastern boundary is____12 3/4"____ inches long. Alberta then is__765'__ miles long on its eastern side. Check 3 ways.

780

From where the Rocky Mountains begin to be the western boundary to the northern boundary is 6 3/4 inches long. This distance then actually is 405. miles. The northern boundary is 5. 3/4" inches long. Then the distance across Alberta at the northern boundary line is 345 miles.

From where the Rocky Mountains cross the southern boundary to the eastern corner there are 3 inches. Then this distance actually is 180. miles.

From where the Rocky Mountains begin to be the western boundary line to where they cut the southern boundary line is about 7 1/4 inches. There are then about 435. miles of mountains along the west side of Alberta.

Why

You *cannot use* very easily the distance *between* the lines running north and south for measuring actual distance on the map, but you *can use* the distance *between* the lines that run east and west. The distance represented on the map by 1 degree between the lines running east and west is about 69 miles.

why.

2. How many degrees are there between the south and the north boundary lines of Alberta? 11° How many miles does this represent? 759

What is the difference in miles between the two ways which you have used in calculating the length of the eastern boundary? 6.

3. By using your scale find the following distances:

Use key pts. instead

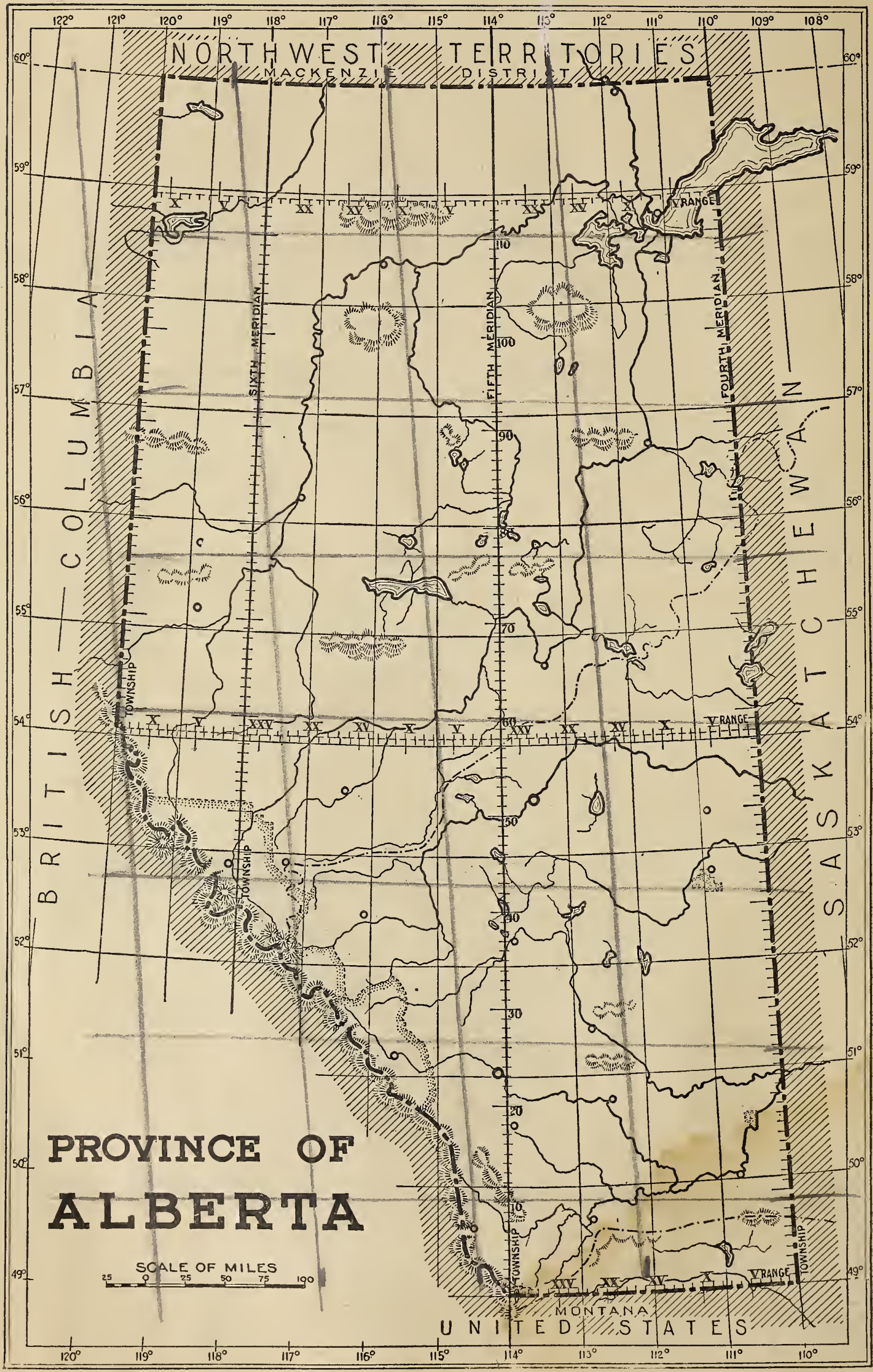
Alberta is 405 miles wide across its widest part. In a straight line it is 180 miles from Calgary to Edmonton.

Calgary is 75 miles from the western boundary and 180 miles from the eastern. Edmonton is 315 miles north of the southern boundary and 450. miles south of the northern boundary.

Edmonton is 145 miles from the eastern boundary and 245 miles from the western. Edmonton, therefore, occupies a position near the athabasca nearer centre. Centre of the province. It is 105 miles from Lethbridge to Calgary. Medicine Hat is 150. miles east of Calgary.

4. If there were a good road from one end of Alberta to the other, how long would it take to travel in an automobile from the southern boundary to the northern boundary, travelling at the rate of 20 miles an hour? 38 1/4 hrs.

5. How long will it take a train to travel from Calgary to Edmonton, running at the rate of 30 miles an hour? 6



PROVINCE OF
ALBERTA

6. At High River there is a government air-ship station. How long would it take an air pilot to travel from the southern boundary following the Rocky Mountains to where they cut the western boundary, if the plane is made to travel at the rate of 60 miles an hour?

7¼ hrs.

7. On the map on the opposite page, divide the boundary lines of Alberta into inches on all four sides, running the straight line of the west boundary right down to the south and marking the inches on it instead of on the line of the Rocky Mountains, making a complete oblong and including a part of British Columbia. Connect the opposite points to divide the map into square inches. Count the number of whole squares and estimate the number of squares you will have in Alberta from the part squares. If a square inch on the map represents 10,000 square miles, what is the area of Alberta in square miles? 245,000 If there are 640 acres in a square mile, what is the area of the province in acres? 156,800,000

The actual number of square miles in Alberta as worked out by surveyors is 255,285, of which 2,360 square miles is covered by water. How far were you from the correct figure? 10,285

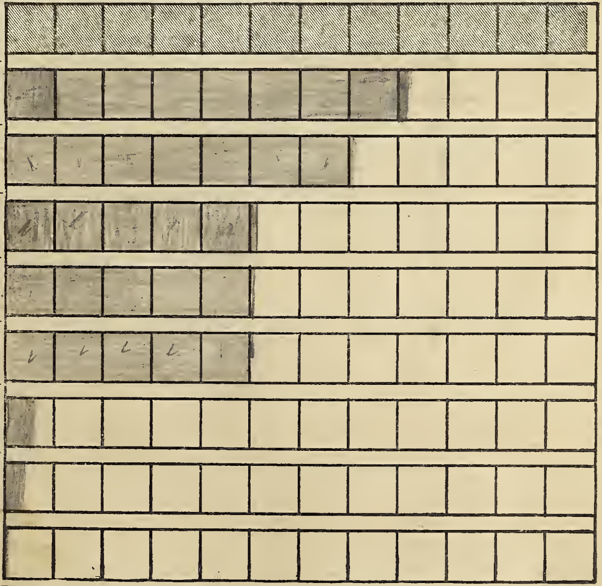
There are 163,382,400 acres in Alberta. How far were you from figuring out the correct acreage? 6,582,400.

Superimpose on glo

8. The following are the areas in square miles of the provinces of Canada:

Complete the graph. Scale 50,000 square miles: ▨

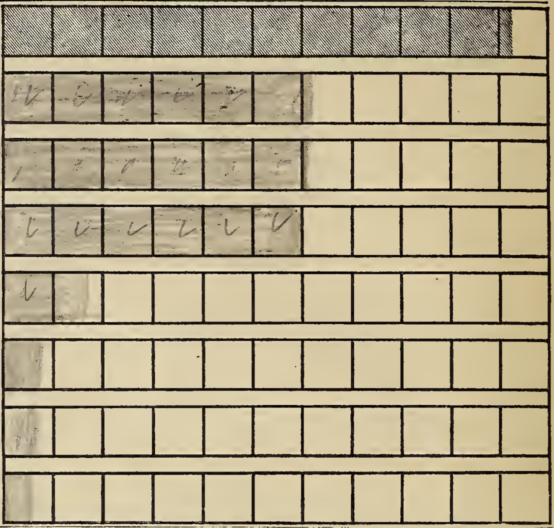
Province	Area
Quebec	591,834
Ontario	407,262
British Columbia	355,855
Alberta	255,285
Manitoba	251,832
Saskatchewan	251,700
New Brunswick	27,985
Nova Scotia	21,428
Prince Edward Island	2,184



9. The following are the areas in square miles of some of the leading countries in Europe (the areas are given in round numbers):

Complete the graph. Scale 20,000 square miles: ▨

Country	Area
France	213,000
Norway	125,000
British Isles	122,000
Italy	120,000
Portugal	35,000
Denmark	17,000
The Netherlands	13,000
Belgium	12,000



10. Alberta is the 4th largest province in Canada. It is about five times as large in area as the three provinces of P.E.I., N.B. and N.S.

It is about 2 1/11 times as large as the British Isles. The area of the Northwest Territories is 1,242,224 square miles. About how many times larger are the Northwest Territories than Alberta? 4 3/4

About how many times is the area of Alberta that of the area of Denmark? 15 of Belgium? 21 1/4 of Holland? 19 2/3 of France? 1 1/5 of Norway? 2 1/2 of Nova Scotia? 11 3/4 of Prince Edward Island? 112 1/3. of New Brunswick? 9 1/10

LOCATIONS IN ALBERTA

(Scale work using the colored map in the centre of the book.)

1. Lay the edge of a sheet of paper so as to run north and south through the undernamed places. Measure the distances that the edges are from Calgary and by using the scale find out about how many miles east of Calgary are the following places:

Brooks 95 miles

Lethbridge 60.

Medicine Hat 150.

Strathmore 30.

Gleichen 45

Drumheller 60

Hanna 92.

Empress 180.

2. In the same way as in No. 1, except that the edge of the paper will run east and west, find about how many miles south of Calgary are the following places:

Gleichen 15

Blairmore 97

Bow Island 75

Brooks 30.

Taber 90.

Macleod 92.

Foremost 107.

Vulcan 45

Bassano 20.

Raymond 108.

Pincher Creek 115

Cardston 127.

3. How many miles as the crow flies and in what direction are the following places from Lethbridge?

Macleod is 30 miles in a west. direction.

Taber is 30 miles in a N. E. direction.

Warner is 40 miles in a S. E direction.

Raymond is 18 miles in a S E direction.

Coleman is 75 miles in a W. direction.

Cardston is 42 miles in a S. W. direction.

Pincher Creek is 50 miles in a S. W. direction.

4. By means of the scale find about how far it is by rail from Medicine Hat to the following places (you might use a thread to lay over the railroad and then measure the thread):

Redcliffe 7½.

Bassano

Calgary

Edmonton 360.

Brooks 67½

Bow Island

Banff

Peace River 745

5. In the same way find how far it is by rail from Edmonton to the following points:

Calgary 180

Wainwright 150

Athabaska

McMurray

Red Deer 95

Edson 135

Vermilion 145.

Peace River 285

6. How many miles east of Edmonton is:

St. Paul? 90 miles
Stettler? 30 ,,
Tofield? 30 ,
Hardisty? 95 ,,
Lac la Biche? 100
Lloydminster? 150
Mundare? 45
Viking? 72.

7. How much farther is Edmonton from Jasper Park than Calgary is from Banff?
195 - 68 = 127 mi

ALTITUDE

use profile method - auto trips
1" - 1000 ft above sea level

In the following tables is given the *altitude*, or height above the level of the sea, of a number of places in Alberta:

1. Along the South Saskatchewan River and its tributaries:

Lake Louise	5,044 feet	Calgary	3,439 feet
Banff	4,534 feet	Lethbridge	2,987 feet
Cochrane	3,750 feet	Red Deer	2,818 feet
Drumheller	2,259 feet	Medicine Hat	2,182 feet

2. Along the North Saskatchewan River and its tributaries:

Saunders	3,923 feet	Fort Saskatchewan	2,048 feet
Rocky Mountain House	3,180 feet	Vermilion	2,029 feet
Edmonton	2,183 feet	Empress	1,480 feet

3. Along the Peace and Athabaska Rivers:

Peace River	1,092 feet	McMurray	2,160 feet
Dunvegan	1,305 feet	Athabaska	1,690 feet

4. Arrange the following places in their order of altitude, beginning with the highest and ending with the lowest: Lethbridge, Calgary, Edmonton, Medicine Hat, Peace River, Saunders, Drumheller, Cochrane, McMurray, Empress

Saunders, Cochrane, Calgary, Lethbridge.
Drumheller, Edmonton, Medicine Hat,
Mc Murray, Empress, Peace River.

LAND SURVEY IN ALBERTA

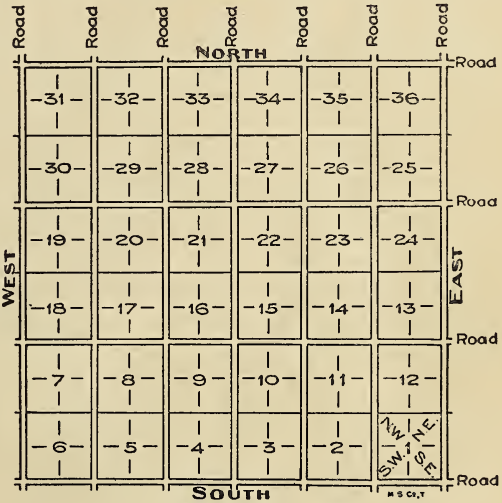
Unlike the older provinces in Canada, Alberta has not counties and county names. The surveyors who mapped our province in the first place adopted a very simple method of dividing up the country. They divided the whole of the country west of Ontario

Start with top notice.

and east of the Rocky Mountains into a number of small squares, using the network of lines referred to in the last section to make the squares. These squares measured as a rule six miles each way and were called *townships*. They were numbered from the south-east corner counting north from the boundary line between Canada and the United States. They were also numbered in a westerly direction, starting from one of the north and south lines already referred to, which are called *meridians*. The surveyors selected a certain north and south line in Manitoba, which, for the purposes they required in making their survey, they called the *First Meridian*. This meridian passes through a point just ~~east~~ WEST of Winnipeg. The Fourth Meridian forms the eastern boundary of the province of Alberta. Counting from Greenwich this is the 110th north and south line, but for the purposes of dividing up the land in Western Canada it is known as the Fourth Meridian. Two other meridian lines fall within Alberta, namely the Fifth and the Sixth.

Numbering westward from the Fourth Meridian, each row of six-mile divisions running north and south is known as a *range*, Range 1 bordering upon the boundary line, Range 2 immediately beside it, and so on across the province. At the widest part of the province there are, roughly, twenty-seven ranges between the Fourth and the Fifth and also between the Fifth and the Sixth Meridians, while west of the Sixth Meridian, there are just thirteen ranges. The ranges are numbered westward from these main meridian lines.

Each township is divided into thirty-six *sections* one mile square. A section contains 640 acres. The sections are numbered from the south-east corner westward in each township, the second row being numbered from west to east, the third from east to west again, and so on alternately back and forth throughout the six rows of sections. This you can understand clearly by studying the accompanying diagram of a township. Each section is divided in turn into four parts of 160 acres each, known as *quarter-sections*. The quarter-sections are described as south-east, south-west, north-west, and north-east quarters. Roads are sixty-six feet wide, and each township has six roads running north and south but only three running east and west. This means that each section has roads on three sides of it, and that each quarter-section, therefore, faces on at least one road, while half the quarter-sections in each township are served by two roads.



Plan of Township in Alberta*

Now, if you wish to locate the farm at the farthest south-east boundary line of Alberta, you would say that it is the south-east quarter of Section 1, Township 1, Range 1, west of the Fourth Meridian.

White Court, north-west of Edmonton, as another example, is located on Section 35, Township 59, Range 12, West of the Fifth Meridian.

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*In a large part of Manitoba and in some parts of Saskatchewan, there is a slight difference from this township plan. There roads were surveyed around each section, so that each township has the same number of roads running east and west as it has running north and south.

1. Locate the following places on the colored map in the centre of the book. After joining the township and range lines, write down in the spaces below their location: Use gov't map

PLACE	Township	Range	West of Meridian	PLACE	Township	Range	West of Meridian
McMurray	89	10	4	Athabaska	68	22	4
Hanna				Lacombe	40	27	
Raymond				Peace River	81	20	5
Blairmore				Camrose			
Grouard				High River			
Ponoka				Red Deer			
Bassano				Edson			
Spirit River				Macleod			
Stettler				Drumheller	29	20	4.
Nordegg				Wainwright	[illegible]	[illegible]	

Grande Prairie 71. 15 6 Munson. Sec 10-15. 30 Twp. 20 R.

2. Draw on the outline map on the opposite page very light lines to represent every fifth cross-line east and west and every third cross-line (meridian) north and south, and number each of the lines that you draw. Be very careful not to smear your page with many lines.

36, 11, 4

3. Locate as accurately as possible the position of each of the places named in No. 1 and neatly print the name of the place on the outline map on the opposite page.

4. In what township and range are the following:

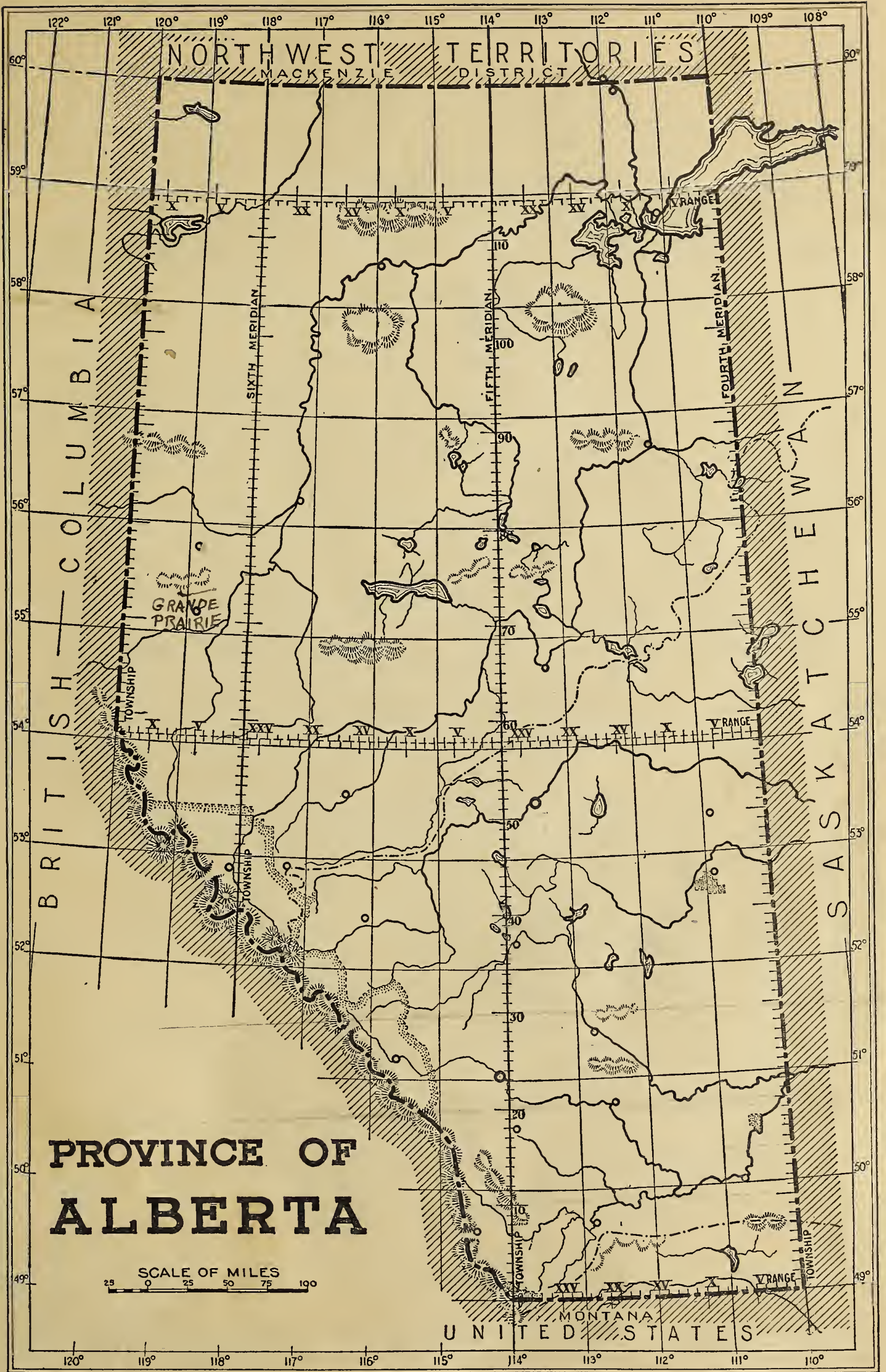
Lake Athabaska?	[illegible] 8 Rge.	Lesser Slave Lake?	73 T. 5 Range
Sullivan Lake?	37 T. 15 R.	Buffalo Lake?	39 T. 19 Range
Gull Lake?	41 T. 1 Range 5th	Lake Wabanum?	51 T. 3 Range
Cold Lake?	62 T. 1 Range	Sylvan Lake?	38 T. 1 Range
Waterton Lakes?	1 T. 29 Range	Lac la Biche?	66 T. 14 Range

5. Print neatly the names of the lakes mentioned in No. 4 in their proper places on the outline map.

A MOTOR TRIP ACROSS ALBERTA

During the first ten days of our vacation we are to take a motor trip across Alberta. We shall need four cars and as many tents to accommodate our party. We must take sleeping bags also, for, while the summer days are warm, the nights are always pleasantly cool in Alberta.

Setting out from Foremost in the south-east corner of the province, we drive first to Lethbridge. The country is level and treeless. The earth has a parched look. The soil is rich, but this corner of the province gets very little rain. It is suitable for raising cattle rather than for farming, for the prairie grass cures on the stem and makes nourishing food for stock.



PROVINCE OF ALBERTA

As we travel westward we pass more and more farms. About Lethbridge there is a district where the land is irrigated. Here the farmers grow fine crops of wheat and sugar beet. Leaving Lethbridge on the Calgary trail, we look eastward across a narrow strip of country dotted with patches of poplar and willow to the open prairies. This part of the country is quite thickly settled. We see fine farms everywhere. On the left hand, the ranch lands of the foothills rise swiftly to the mountains towering against the western sky.

North of Calgary the mountains begin to fall back towards the west. We find at first bare open prairie on both sides of the road. Then the trees begin, and soon we are driving through as pretty a country as there is in the whole world. Low hills roll away to the horizon, farmhouses nestle close to them, clumps of graceful poplars, patches of woodland, a vast park stretches away to the Saskatchewan boundary.

At Red Deer we cross the Red Deer River and pass into Central Alberta. The trees become taller, and there are more evergreens among the poplars. We notice more fields of oats, as we are now in the mixed farming country. North of Edmonton we drive through bushland. Mile after mile the road runs through woods with spaces of open country between. Stretching away towards the mountains lies the much-talked-of Peace River Country. Here we are once more in a great natural park carpeted with grass and flowers growing waist high. Beautiful lakes dot the landscape. Fine rivers descend from the mountains. This land is so rich and so lovely that it is rapidly being taken up by settlers.

Beyond Peace River we are in Northern Alberta. We pass down the Slave River to Fort Smith, which lies on the boundary between Alberta and the Mackenzie District. The land is covered with woods. We find the weather hot and the mosquitoes bad. As yet, few people live here. We meet hunters, fishermen, fire patrols, and prospectors. The hunters show us their packs of furs. The fishermen boast of the tons of fish shipped from our northern lakes. The fire patrols tell us of the limitless miles of valuable timber in Alberta. The prospectors talk of fortunes in coal and tar sand and oil. We grow quite tall with pride in this great and rich province of ours.

Complete these sentences by filling in the right word:

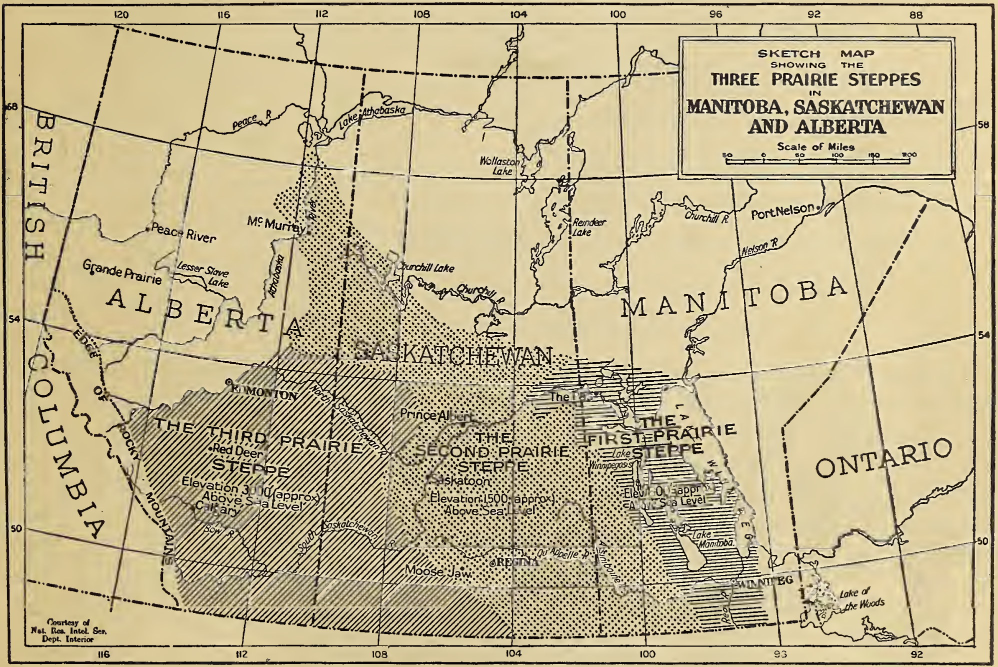
1. Southern Alberta gets little________________________.
2. To be sure of a crop farmers must________________________their land.
3. This part of the province is best suited for________________________.
4. The grass is good stock food because______________________________.
5. North of Calgary we reach the___________________________of Alberta.
6. In this region the farmers do________________________farming.
7. North of Edmonton we find________________________land.
8. The________________________________ district is famous for richness and beauty.
9. Northern Alberta is not yet________________________________.
10. We get from it______________ and______________and______________and_________

ALBERTA FROM AN AEROPLANE

This time we are to make our journey across Alberta in an aeroplane. We go up, up, and up, so high that we can see great stretches of the country at once. As we fly swiftly northward, we see that the whole province is like an enormous table, tilted so that it slopes downward towards the east.

The surface of this table is, of course, not level. Along our western boundary lie the Rocky Mountains, huge masses of rock which rise ten or twelve thousand feet into the air. Fortunately for us, there are gaps or passes in these great walls of rock; if there were not, we should not be able to go in and out on the west side of our province. Six of these passes are particularly useful to us: The Crowsnest, the Kicking Horse, The Yellowhead, the Pine, the Peace River Pass, and the Monkman Pass.

The tops of the mountains are peaks and ridges of bare rock upon which the snow lies all summer long. Lower down, there is a "tree-line". Below this, dense forests grow, and in the valleys there are fine woodlands, which provide us with lumber, and rich coal deposits, from which quantities of coal are mined. As the snow slips down the mountain sides, it melts and runs together into streams which flow very swiftly down the steep slopes, making abundant water-power for Alberta's electric light plants and factories.



Flying northward, we see many, many streams running down from the mountains. We can see that these rivers have helped to make Alberta. They flow so swiftly that they have a great deal of power. They carry quantities of rock, sand, and soil. The farther they travel from the mountains, the more slowly they run, and the less soil they can carry. The heavier sand and rocks have been dropped at the foot of the mountains. Here we see the foothills, long rolling slopes covered with grass. Below the foothills, less and less soil has been dropped by the rivers, so that the land slopes steadily downward towards the east.

Now let us turn and fly eastward. At once we see that our province lies on a great shelf, which is called the "third steppe". Just west of Moose Jaw we see that there is a sudden drop in the height of the land. Most of the province of Saskatchewan lies considerably lower than Alberta on the "second steppe". In Manitoba, we find that there is another drop to the lowest level or "first steppe". Much of Manitoba was once the bed of a vast lake. Crossing that province we notice the fine black soil, which is the silt which once lay upon the floor of the lake.

Cross out the wrong word:

1. The Rocky Mountains lie $\binom{\text{EAST}}{\text{WEST}}$ of Alberta.
2. Our province slopes $\binom{\text{UP}}{\text{DOWN}}$ from the mountains.
3. Alberta is tilted $\binom{\text{WESTWARD}}{\text{EASTWARD}}$.
4. Our rivers flow $\binom{\text{WESTWARD}}{\text{EASTWARD}}$.
5. The rivers have built up the land in $\binom{\text{STRIPS}}{\text{STEPPES}}$.
6. Alberta lies on the $\binom{\text{SECOND}}{\text{THIRD}}$ steppe.
7. Saskatchewan is $\binom{\text{LOWER}}{\text{HIGHER}}$ than Alberta.
8. Manitoba is $\binom{\text{LOWER}}{\text{HIGHER}}$ than Alberta.
9. Manitoba lies on the $\binom{\text{FLOOR}}{\text{SHORE}}$ of an ancient lake.
10. Flying westward, we see Alberta rise in $\binom{\text{TWO}}{\text{THREE}}$ tiers.

THE FOUR KINDS OF LAND IN ALBERTA

You have travelled across Alberta from south to north and from east to west. You have seen the four great districts into which our province is divided.

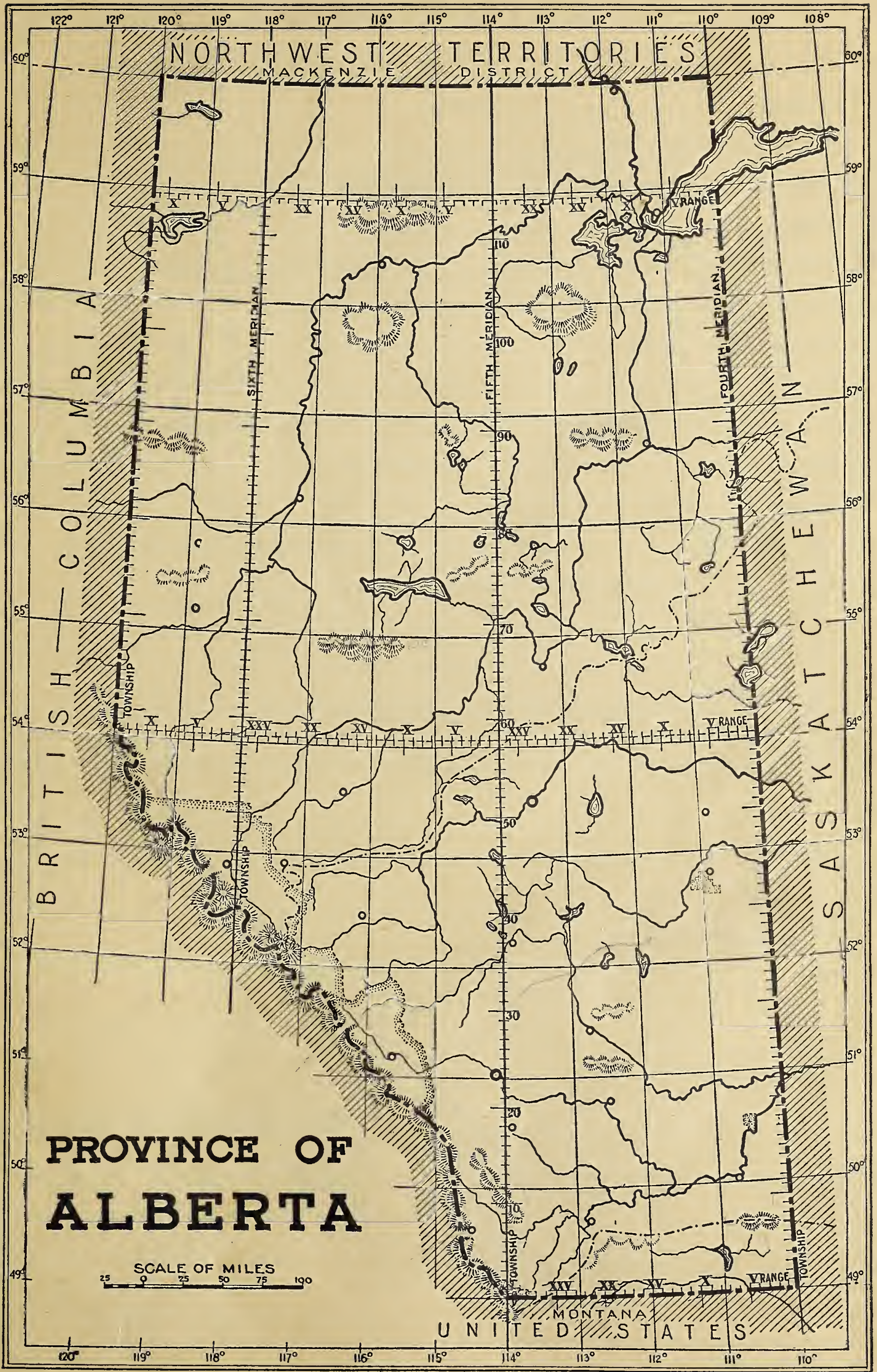
On the map on the opposite page mark off the four kinds of land in Alberta.

By following the color tints on the map in the centre of the book and by being careful to note the irregular outlines of these districts, tint the outline map and print neatly the names of the districts so colored. Mark on this map the position of the following hills and print neatly their names: (1) Cypress Hills, (2) Milk River Ridge, (3) Wintering Hills, (4) Hand Hills, (5) Beaver Hills, (6) Swan Hills, (7) Martin Mountain, (8) Pelican Mountain, (9) Trout Mountain, (10) Birch Mountain, (11) Clear Hills, (12) Buffalo Head Hills, (13) Caribou Mountain.

Also show on the map the (*a*) Crowsnest Pass, (*b*) Kicking Horse Pass, (*c*) Yellowhead, (*d*) Peace, (*e*) Pine, (*f*) Monkman Passes.

Each one of the four districts of Alberta is beautiful in its own way; each one is useful in its own way. Describe each of these districts by filling in the missing words in these sentences:

1. The *mountain and foothill* country lies on the______________side of Alberta.
2. This region is at the ______________of the great slope.
3. It is very______________to look at.
4. It brings many______________to visit our country.
5. The mountains are rich in______________.
6. The foothills are well suited for______________.

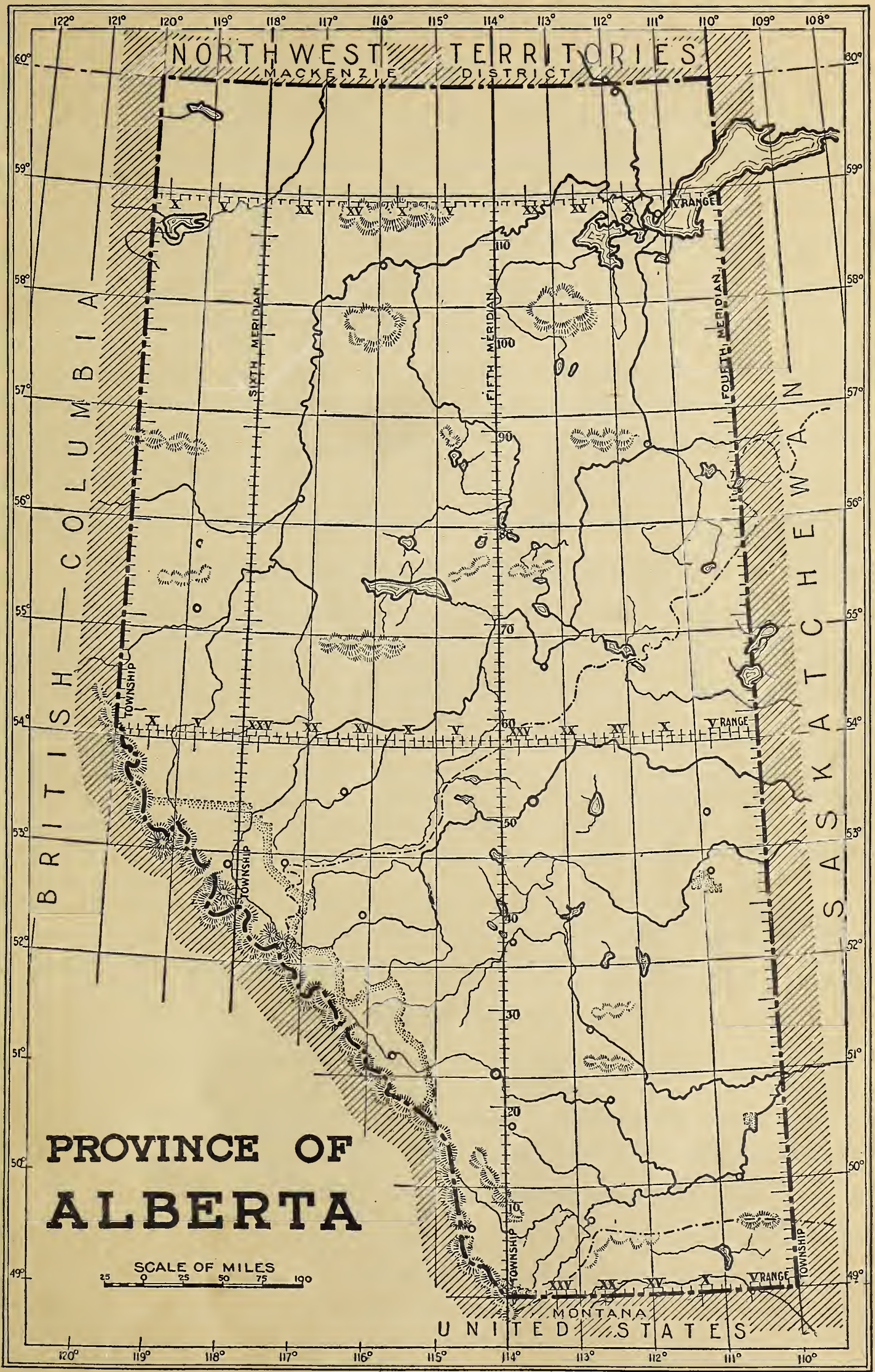


PROVINCE OF ALBERTA

7. The *prairie* country lies________________of the mountains and foothills.
8. It lies in ________________Alberta.
9. It gets rather too little ________________.
10. Some of the farmers________________their land.
11. They grow________________and________________.
12. The *parklands* of Alberta lie________________of the prairie region.
13. The trees are mainly________________and________________.
14. This region is very________________to look at.
15. The farmers grow ________________and________________and keep________________.
16. The *bushland* of Alberta lies in the________________part of the province.
17. The soil there is________________. The trees are________________than in the parklands.
18. The woods contain valuable________________.
19. Quantities of________________and________________are shipped from this region.
20. This part of Alberta is believed to be rich in________________.

A LETTER OF ADVICE

Mr. Alexander MacPherson is a Scotsman who is thinking of coming out from Scotland to settle in Alberta. Write him a letter. Describe the four kinds of country we have here. Tell him what each kind is particularly suited for and advise him in which district to make his home.


PROVINCE OF
ALBERTA
SCALE OF MILES
25 0 25 50 75 100
NORTHWEST TERRITORIES
MACKENZIE DISTRICT
BRITISH COLUMBIA
SASKATCHEWAN
MONTANA
UNITED STATES
SIXTH MERIDIAN
FIFTH MERIDIAN
FOURTH MERIDIAN
TOWNSHIP
RANGE
60°
59°
58°
57°
56°
55°
54°
53°
52°
51°
50°
49°
122°
121°
120°
119°
118°
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108°
10
20
30
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60
70
90
100
110
XXV
XX
XV
X
V

4. The North Saskatchewan River__________

5. The Red Deer River__________

6. The South Saskatchewan River__________

RIVERS WORK

The Bow is one of the most beautiful of our rivers. It tumbles through the Gap at Banff and races away through Calgary to join the South Saskatchewan. The Bow does four kinds of work for the people of Calgary. It makes a delightful Summer resort at Banff. It makes electricity, which is used for light and heat. It floats logs down to the sawmills. It irrigates the farms near at hand.

Name five other Alberta rivers and tell the kinds of work done by each.

1. Peace River - it is a home for fish. It is a highway) explorers, it carries logs, electricity
2. North Saskatchewan
3. Athabasca
4. Red Deer
5. Old Man

RIVERS HELP TO MAKE TOWNS

Study the colored map in the centre of this book and find out what rivers help to support each of these towns or groups of towns:

1. White Court, Athabaska, and McMurray are on the Athabaska River.
2. Peace River and Fort Vermilion are on the Peace River.
3. Rocky Mountain House and Edmonton are on the N. Sask. River.
4. Ponoka and Hardisty are on the Battle River.
5. Red Deer, Drumheller, and Empress are on the Red Deer River.
6. Banff, Cochrane, and Calgary are on the Bow River.
7. Carmangay is on the [illegible] Bow River.

8. Cardston is on the St. Mary's River.

9. Cowley, Macleod, and Lethbridge are on the Old Man. River.

10. Entwistle is on the Pembina. River.

ALBERTA'S FOUR GREAT RIVERS

THE PEACE

The Peace is one of the most famous rivers in Canada. Following it, Sir Alexander Mackenzie found his way through the Rocky Mountains and so reached the Pacific Ocean. Mackenzie and his party set out from Fort Chipewyan in the autumn of 1792. They found the Peace a wide shallow stream flowing quietly. Only one rapid was met with in the first part of their journey. Passing up the river, they came upon gypsum cliffs. The tar oozed out of the steep banks and rolled down to the water's edge in sluggish streams. One hundred and eighty-eight miles up the river they were forced to portage around the Vermilion Chutes. At this point the mile-wide river drops over a thirteen-foot ledge. Nine and a half miles farther up the river they found a second fall, this time in the form of a rapid in which the river drops eleven feet in half a mile.

Three hundred miles above the Chutes, Mackenzie and his men reached the mouth of the Smoky, a fine mountain stream which flows into the Peace from the south. Near this point the explorers built a comfortable camp and spent the winter.

By May 9th, 1793, the river was free of ice, and Mackenzie started west on his dash for the Pacific coast. As they advanced, the river became narrower and swifter. Paddling hard against the strong current, the explorers made their way past the mouth of the Pine River, which flows into the Peace from the north, to the foot of the canyon by which the Peace breaks through the mountain wall. Straining and sweating, wading, portaging, cutting their road, they fought every inch of their way up the awful twenty miles to the head of the canyon. At times it seemed as if they could not go farther, but in the end they won through and reached the forks of the Peace. Here, high up among the mountains, the Finlay flowing from the north joins the Parsnip flowing from the south to form the Peace, which at its beginning is no more than three hundred feet wide.

Nowadays, there are five well known places on the Peace. Hudson's Hope stands at the foot of the canyon. Fort St. John is farther down. The Fort is built on a small flat above the river. A motor road climbs up to it, but it is rather a dangerous drive, as there is room for one car only, and the bank drops a thousand feet. Motorists starting down the grade blow their horns for five minutes to warn those below not to start up. Fort St. John is a centre of the fur trade. Most of the inhabitants are Indian hunters and trappers. Of late years trapping has become so profitable that many Indians have left their farms and returned to their old trade.

At Dunvegan, the river is half a mile wide and runs between banks eight hundred feet high. The motor road which winds down the south bank is a mile long. The banks at this point are heavily wooded, but the woods soon give way to the splendid sweep of open country called Spirit River Prairie.

The town of Peace River, which is connected with Edmonton by rail, is now the business centre of that part of Alberta. It stands near the mouth of the Smoky. Peace River is a thriving town with wide streets and handsome buildings. Elevators have been built at the top of the bank on both sides of the river, so that the farmers need not drive their grain wagons down the steep hillsides. Peace River also does a large trade in furs. The trappers come there in the autumn to buy their outfits, and during the winter they bring in the furs which they have to sell.

Three hundred miles farther down the river stands the trading post of Fort Vermilion. In the long sunny days of the short summer, every sort of vegetable grows to the largest size. In summer a steamer makes regular trips up and down the river from Fort Vermilion to Hudson's Hope. It is quite the fashion nowadays to take this trip.

A TRIP UP THE PEACE

Pretend that you have taken a trip from Fort Vermilion to Hudson's Hope. Write a description of the trip. Find out and tell:

1. How long the trip would take.
2. How much it would cost.
3. How to get from Edmonton to Fort Vermilion.
4. What the river Peace is like.
5. What the country through which it flows is like.
6. What towns you pass.
7. What people you meet with.
8. Tell of a dangerous adventure which happened at one point on the trip.

The Athabaska River

The Peace River and Athabaska Country is the oldest part of Alberta; that is, it was the first part of our province to be explored by white men. It was discovered by Peter Pond, a fur trader, in 1778. Looking for new fur districts, Pond came down the Clearwater into the Athabaska River. He built a trading post on the Athabaska about thirty miles from the mouth. The river has been a highway for the fur trade ever since.

The Athabaska River rises in Jasper Park beyond Mount Edith Cavell. It flows around a curve to Athabaska Falls, where it leaps into a canyon half a mile wide and eighty feet deep. After that it flows northward through a broad valley with fine mountain ranges on both sides. Jasper Lake and Brule Lake are really just widenings of the river. It comes down from the mountains through Athabaska Pass and flows first north-east and then almost straight north to Lake Athabaska.

West of the river lies Lesser Slave Lake, a large but very shallow body of water which drains into the Athabaska through Lesser Slave River. Below the point where this river joins it, the Athabaska makes a long bend southward to the town of Athabaska. Athabaska is a pretty town, built at the foot of a wooded slope. It has a hospital and a fine high school; its school grounds are said to be the prettiest in Alberta. Travellers cross the river here on a ferry, and a winding road climbs the steep northern bank. The people of Athabaska spend their holidays at Lake Baptiste, where there are cottages and camping grounds. Athabaska is ninety-five miles from Edmonton. The trip may be made either by train or by car. The government highway is kept in good order.

Below the town, the river flows quietly as far as the mouth of the Pelican River. After that there are several small rapids and at last the Grand Rapids. Here the river falls sixty feet in half a mile. The bed is covered with great rocks over which the water dashes furiously. No boat, large or small, can pass the Grand Rapids. The bravest canoemen portage at this point. From the Grand Rapids to the mouth of the Clearwater, the Athabaska flows between high banks and rushes over many dangerous rapids. It is in this part of the river that the tar sands are seen. In ages past, oil has welled up from below and cemented the sand of the river bank into a tarry mass two hundred feet thick. In some places the sands are so rich that pure tar oozes out of them.

The Clearwater flows into the Athabaska from the east. Its bright waters can be seen mixing slowly with the muddy Athabaska. The town of McMurray stands at the junction of the two rivers. Below McMurray there are mineral springs on the river bank. At one of them a high tower of white mineral has been piled up by the waters. From this point on, the river flows smoothly. It is now about a third of a mile wide, and its banks are low. Just before reaching Lake Athabaska the river divides into several streams, the channels of which change during the spring floods.

The country between the Athabaska and the Peace Rivers is a rolling plain covered with woods. There are a few small patches of prairie where the woods have been burned off. The plain is thickly sprinkled with lakes, marshes, and muskegs. The lakes are shallow, and most of them are gradually filling up with sphagnum moss. In time they will all be muskegs. The woods are mainly spruce, with birch and poplar scattered among the fir. The largest trees are about two feet through. There is a great deal of valuable timber in these woods, and the fire patrols watch it, hoping to save it against the time when it will be needed by settlers.

THINGS TO DO

1. In the space on the next page draw a map of the Athabaska River.
2. Draw the mountains and mark off Jasper Park.
3. Show where the Athabaska rises. Mark Jasper Lake and Brule Lake.
4. Draw Lesser Slave Lake and the river that drains it into the Athabaska.
5. Mark the town of Athabaska, and draw the Pelican River.
6. Mark the Grand Rapids and show the tar sand cliffs.
7. Mark the point at which Peter Pond reached the Athabaska. What town stands there now? ______________________________
8. Find out what tar sand is used for. ______________________________

____

9. Find out what sphagnum moss is used for. ______________________________

____

Map of the Athabaska River

The North Saskatchewan

The Trail Riders is a society whose members spend their summer holidays riding and camping in the Rocky Mountains. They make their camp in some central place and then take long rides in every direction, exploring the dangerous mountain trails and enjoying the beautiful scenery. Nancy Flower is the youngest member of the Trail Riders' Society. She is only seven, but she rode the fifty miles necessary to become a member of the society in a month. Now she has the button which shows that she has ridden a hundred miles on the mountain trails.

Last summer a party of Trail Riders planned to visit the source of the North Saskatchewan River. They came up from the west side of the mountain range, following the Blaeberry up its steep course till they came to the lovely open meadows in Howse Pass. Coming down through a piece of burnt woodland blazing with fireweed, they found a shallow mile-wide stream. The water ran in thin threads among sand-bars. The Riders forded it thirty-eight times in the next few miles.

At last they came to a place where a strong little river flowed in from the north. This was the North Fork. Nancy stayed behind with the women, but the men pushed up the steep and narrow canyon of the Fork till they came to Panther Falls. Here the river seems to burst out of a great hole in the mountain side.

Back on the main stream again, the Riders followed the river eastward and downward, sometimes wading, sometimes walking in the woods carpeted with flowers. Trout were plentiful, and each night the party dined royally.

The North Saskatchewan comes down through the foothills with a strong current. It has cut for itself a deep valley in the prairie. In some places the heavily wooded banks are two hundred feet high. Here and there along the river edge the bottom lands are being farmed. During most of the year the river is not full. In one place a teacher was able to cross to her school on stepping stones. In summer, when the snow on the mountain tops is melting, however, the Saskatchewan is a wide and powerful stream.

Travelling eastward, the Trail Riders saw coal mines in the river banks, places where men were washing the river sands for gold, and many logs were being floated down to Edmonton. West and east of that city the Saskatchewan runs through rolling plains covered with forests. Much of the timber has been cleared away, and all this part of the country is now well settled farming land.

At Edmonton the Riders' party broke up, and the members took the train for their homes. Edmonton is the capital of Alberta. It is a large city built on both sides of the Saskatchewan. At this point the river banks are high and steep. A very long and high bridge joins the two parts of the city. The Parliament Buildings are of gray stone and are set in gardens by the river-side. The University stands on the south side of the river. It has a great many fine buildings of red brick. Probably you will go to the University there when you leave high school. Edmonton has many large stores and factories, but the thing in which Nancy was most interested was the South Side Swimming Pool. It is a very beautiful pool. It is in a park by the river and is open to the sky. The great trees lean over the high fence and look at themselves in the fresh clear water. Here, all summer long, crowds of boys and girls splash and swim.

East of Edmonton the Victoria Trail runs down the river-side to Fort Victoria. It is a good road, which gives many fine views of the great river as it winds through the farm lands on its way to the boundary. It flows on through the province of Saskatchewan. Just east of the city of Prince Albert it is joined by the South Saskatchewan. The united rivers flow into Lake Winnipeg and then, under the name of the Nelson, into Hudson Bay.

A PUZZLE

Arrange these names in the order in which we meet them in descending the North Saskatchewan River:

Victoria Trail
Panther Falls
Coal mines
Edmonton
Hudson Bay

Howse Pass
Gold washing
Prince Albert
Farm lands
The Nelson

Athabaska Falls
The North Fork
Forest land
Fort Victoria
Lake Winnipeg

The South Saskatchewan

The South Saskatchewan is formed by the union of two rivers: the Old Man and the Bow. The Bow is a beautiful river. Within sight of the foothills, it is joined by the Elbow, and, at the junction of the two rivers, the city of Calgary lies. Calgary has a very picturesque situation and is an important centre with large agricultural and industrial interests. It has many large public buildings and manufacturing plants. We have already seen (page 26) what the Bow does for the city.

The Old Man River rises on the west side of the mountain range. Four large creeks run together to make it. It flows through a great gap in the range not very far north of the International Boundary. It flows south-east as far as Cowley Station, where it is joined by the Crowsnest and the Castle Rivers. Now quite a large stream, it flows swiftly down the steep grade and out across the prairie. It runs through the middle of a wide shallow depression in the land. This depression is not an old river valley, it is much wider than that. The geologists do not know just what has caused it.

At Lethbridge the Old Man is 437 feet wide and running in a deep trough. There are rich coal mines in the steep bank of the river at this point. A very high bridge carries the railway across the river on its way to the Crowsnest Pass and the United States.

Below Lethbridge the river valley is a mile wide, and the river winds from one side of it to the other. At Big Island Bend it turns eastward. After this there are no trees on the bottom lands, and the high banks are covered only with grass. At Grand Forks the Bow flows into the Old Man from the north, and the two form the South Saskatchewan.

The South Saskatchewan flows north-eastward across the prairie to Medicine Hat. Little rain falls in this part of the country, and it is better suited for ranching than for farming. Passing down the river, we see on both sides endless miles of sun-dried prairie grass. Down the steep, bare banks of the river wind the narrow paths made by the range cattle. Rattlesnakes lie basking on sunny ledges. The current sweeps along with smooth and silent but resistless force. The Saskatchewan is a very treacherous stream; it is safe neither for swimming nor for boating.

At Medicine Hat the river sweeps around in a curve, leaving a large flat at the foot of the steep bank on the east side. Part of the city is built on this flat. Southern Alberta is the part of the country in which the Chinook winds are strongest. Medicine Hat has a very mild climate, and the people have beautiful gardens. There are a number of factories, too. The city is in the gas area, and there are many gas wells. The people use gas for cooking, heating, and lighting.

Just beyond the eastern boundary of Alberta, near the town of Estuary in the province of Saskatchewan, the Red Deer River flows into the South Saskatchewan. Swollen by the waters of the Red Deer, the river flows north-eastward across Saskatchewan and joins the North Saskatchewan just east of the city of Prince Albert.

Complete these sentences describing the South Saskatchewan:

1. The South Saskatchewan is formed by the union of the Old Man ____________ and the Bow river____.
2. The Old Man flows from the ____________side of the mountains through a ____________ ____________towards the prairies.
3. It flows____________and then northeast and then east [illegible] north east.
4. Most of its course lies between____________and____________banks.
5. There are____________at Lethbridge.
6. The Bow rises in the mountains____________of Banff.

7. It flows through two towns: Banff and Canmore.

8. It joins the Old Man at Grand Forks.

9. The largest town on the South Saskatchewan is [illegible].

10. The largest tributary of the South Saskatchewan is Bow River.

11. The country through which the South Saskatchewan flows is suited for ranching.

12. The climate is mild and dry because of the Chinook winds.

ALBERTA HAS TWO GREAT LAKES

Classify { Pleasure
Transport.
Fish

Lakes form a very important part of the drainage system of any country. They act as reservoirs, storing the extra water in times of flood and keeping it from drowning the low parts of the land.

There are very few lakes in Southern Alberta. The Chinook winds are warm and dry, and they absorb the moisture. The rivers are swift mountain streams which have dug for themselves deep channels in the prairie. Their high banks easily hold all the flood waters which the melting mountain snows send down to them. Lake Pakowki is the largest lake in the south. It is much indented by bays and holds several islands. There are high banks at the western end of the lake, but the land at the eastern end is low and broken by bare sand hills. The lake is shallow. The water has a milky color and is slightly salty.

In Central Alberta there are many small lakes. Lake Louise is the most beautiful. Many people think it the most beautiful lake in the world. It is small and of a marvellous blue-green color. It lies gleaming like a jewel in a tiny heart-shaped valley west of Banff. High mountains rise up steeply on every side, and the magnificent glacier on Mount Lefroy forms its background. There is a great hotel at Lake Louise, and many people visit it every summer. Lake Minnewonka at Banff is another beautiful little mountain lake. Most of the towns and cities of Alberta have near them pretty lakes where the people may go to spend their week-ends and holidays.

In Northern Alberta, there are many small lakes and two large ones. Lesser Slave Lake we noted on our journey down the Athabaska. It is a long, narrow sheet of water lying east and west. It is about sixty miles long and twelve miles wide. It covers 484 square miles, but it is so shallow that few parts of it are more than ten feet deep. There are some good beaches along the north shore, but the southern shore is marshy. Several small rivers feed Lesser Slave Lake, and Lesser Slave River drains it into the Athabaska River. The country around the lake is covered with spruce and poplar woods.

Lake Athabaska is only partly in Alberta. More than half of it lies in the province of Saskatchewan. It, too, is long and narrow and lies east and west. It is 195 miles long and 35 miles wide, covering some 2,900 square miles of land. The south shores rises steeply 500 feet to a great sandy plain. The north shore is rocky, indented by bays, and fringed with islands. The watershed between Lake Athabaska and Great Slave Lake lies only a few miles north of Lake Athabaska, so that all the rivers flowing into the lake on the north are short. Those flowing in on the south are longer, but they are shallow and not navigable. The lake is fed by two large rivers: the Black River at the east end, and the Athabaska, which enters at the west. In times of flood the Peace overflows, and part of its water drains into Lake Athabaska. Ages ago, the lake extended much farther west than it does now, Lake Claire being then part of it. But the Athabaska and the Peace Rivers have built up large deltas at their mouths and so cut off Lake Claire. A good deal of fishing is done in Lake Athabaska, and many tons of fine white fish are shipped out each year.

THINGS TO DO

1. With plasticine or sand make a model of the province of Alberta. Very effective
2. Raise the Rocky Mountains along the western boundary.
3. Mark out the courses of the four great rivers with their tributaries.
4. Make beds for the following lakes:

Athabaska
Claire
Lesser Slave
La Biche
Wabamum near Edmonton
Cooking near Tofield
Dried Meat near Camrose
Buffalo near Stettler
Gull near Lacombe
Sylvan near Red Deer
Louise
Minnewonka
Pakowki

5. Read again the paragraph about Lake Athabaska and then answer these questions:

How large is it?

How much larger was it in times past?

What is the southern shore like?

What is the northern shore like?

Why are the rivers on the north shore short?

When does the Peace drain into Lake Athabaska?

What rivers drain out of Lake Athabaska?

Of what use is this lake?

6. Read again the paragraph about Lesser Slave Lake and write a description of it, telling the same things as you told about Lake Athabaska.

Lesser Slave Lake is along and narrow [illegible]
lying east and west. It is about sixty miles long
and [illegible] miles across.

7. Read again the paragraph about Lake Pakowki and describe it, telling the same things as you told about Lesser Slave Lake.

8. After the name of each lake, mountain, and city given, write the name of the drainage basin in which it lies and the natural region in which it is located:

Cypress Hills are in the Hudson Bay Basin in the Prairie Region.

Grande Prairie is in the Peace River Basin in the [illegible] Region.

Sylvan Lake is in the Red Deer Basin in the Parkland Region.

Macleod is in the Old Man Basin in the [illegible] Region.

Birch Mountains are in the Birch River Basin in the Bush Region.

Coutts is in the Milk River Basin in the [illegible] Region.

Drumheller is in the Red Deer River Basin in the [illegible] Region.

Fort Chipewyan is in the Lake Athabaska [illegible] Basin in the [illegible] Region.

Pigeon Lake is in the Battle R Basin in the Bushland Region.

CLIMATE OF ALBERTA

Sunshine, Summers and Winters, Rainfall, Winds

Sunshine.—The following table shows the time at which the sun rises and sets in Edmonton, in Calgary, and in Toronto. Fill in the columns so as to show the hours and minutes of daylight and darkness at each of the places during the day named. Write the hours and minutes as 13° 12′, meaning thirteen hours twelve minutes, etc.

	Sun Rises A.M.			Sun Sets P.M.			Hours and Minutes of Daylight			Hours and Minutes of Darkness		
	Calgary	Edmonton	Toronto	Calgary	Edmonton	Toronto	Calgary	Edmonton	Toronto	Calgary	Edmonton	Toronto
Sep. 22	6.21	6.18	6.04	6.36	6.34	6.16	12° 15'	12° 16'	12° 12'	11° 45'	11° 44'	
Oct. 22	7.08	7.13	6.40	5.30	5.23	5.24	10° 22	10° 10"	11° 35'	13° 38	13° 30"	
Nov. 22	8.03	8.12	7.21	4.41	4.28	4.47	8° 38'	8° 16"	11° 26'	13° 22'	13° 44"	
Dec. 22	8.37	8.49	7.49	4.32	4.17	4.45	7° 55'	7° 28"	11° 4'	16° 5"	16° 32"	
Jan. 22	8.27	8.35	7.45	5.09	4.57	5.14	8° 42	8° 22"	9° 29"	15° 18"	15° 38"	
Feb. 22	7.36	7.39	7.08	6.04	5.57	5.56	10° 28'	10° 18'	3° 45	13° 32"	13° 42"	
Mar. 22	6.36	6.33	6.18	6.52	6.50	6.33	12° 16'	12° 19'	12° 15'	11° 44'	11° 43'	
Apr. 22	5.28	5.20	5.24	7.42	7.46	7.10	14° 14"	14° 26"	12° 1	9° 46"	9° 34"	
May 22	4.38	4.24	4.46	8.28	8.38	7.43	15° 50'	16° 14'	11°	8° 10"	7° 46"	
June 22	4.21	4.04	4.36	8.54	9.07	8.03	16° 33"	17° 3'	10 [illegible]	7° 27"	6° 57"	
July 22	4.46	4.32	4.56	8.38	8.48	7.52	15° 52'	16° 16'		8° 8'	7° 44"	
Aug. 22	5.32	5.24	5.29	7.44	7.49	7.12	14° 12'	14° 25"		9° 48"	9° 35"	

Why.

1. In what month does the sun rise the earliest? June

   In what month does the sun rise the latest? December.

   In what month does the sun set the earliest? December

   In what month does the sun set the latest? June

2. In what month have we daylight longest? June

   In what month have we daylight shortest? December.

The sun rises 17 minutes (~~EARLIER~~ LATER) in Calgary than in Edmonton on June 22nd and sets 13. minutes (EARLIER / ~~LATER~~) on the same day, which gives Edmonton 30 minutes (MORE / ~~LESS~~) daylight on this day than has Calgary.

3. The sun rises 32 minutes (EARLIER / LATER) in Toronto than in Edmonton on June 22nd and sets 1hr. 4 min minutes (EARLIER / LATER) on the same day, which gives Edmonton 1h. 36. minutes (MORE / LESS) daylight on the same day than has Toronto.

4. The sun rises 12 minutes (EARLIER / LATER) in Calgary than in Edmonton on December 22nd and sets 15 minutes (~~EARLIER~~ / LATER) on the same day, which gives Edmonton 27 minutes (MORE / LESS) daylight on the same day than has Calgary.

5. The sun rises 1hr minutes (EARLIER / LATER) in Toronto than in Edmonton on December 22nd and sets 28 minutes (~~EARLIER~~ / LATER) on the same day, which gives Edmonton 1hr. 28 minutes (MORE / LESS) daylight on the same day than has Toronto.

6. In what months are the hours of daylight and darkness most nearly equal?

September, March.

7. Why is Alberta generally known as "Sunny Alberta"?

[illegible]

Peace River, Alberta, Dec. 18th, 1929.

Dear Lucy,

Yes, indeed, we like Alberta very much. It is quite different from England, and at first we were rather homesick. But we have now been here a year and would not wish to go back to London to live. It would be great fun if you were to come out. I hope you may.

Last winter we lived in Calgary, which the doctors had recommended for mother. The air in Alberta is very dry and bracing, the sun shines almost every day. It did mother a great deal of good. Many sick people come here to get well.

We had a fortnight of cold weather in January. The snow was quite deep, and the temperature fell to 25 below zero. Then, one day just as we were leaving school at noon, the wind began to blow from the south-west. It was the warm, dry wind called the Chinook. It melted the snow very quickly. After that we had several cold weeks, but each time the Chinook came and made it seem like summer.

In spring I missed the daffodils and other flowers sadly. The snow had gone, the sun shone, and yet there were no flowers out and no leaves on the trees. It was quite warm for two weeks before the crocuses began to come out. They are lovely little mauve flowers which cover the hillsides. We gathered basketsful of them. Meantime the farmers had been ploughing and sowing wheat. When the wheat was an inch high, we had a severe frost. Late spring frosts are common here, and they do much harm to the crops.

All this time it had not rained once. Think of that, five whole months of sunshine. In Alberta it seems to rain only when the crops need it. In May it began, and we had a good many wet days during the next three months. In July there was a Chinook, too. Chinooks are pleasant in winter, but in summer they are dreaded, as they scorch the young grain.

In July we moved to Peace River. The summer here was delightful, warm days and delightfully cool nights. Early in September a heavy frost killed all our sweet peas, but after that we had beautiful weather for six weeks or more. The days were warm and sunny and the nights cool enough to freeze the pond so that we had good skating. At the end of October the snow came, and since then we have had some really cold days. For a few days it was 40 below zero. But we went skating and skiing in spite of the cold. The men drove their cars just the same. You would like our winters because of all the splendid sports. I do hope your father may decide to come out here to live.

Wishing you all a Merry Christmas and a Happy New Year,

Yours sincerely,

Grace Weston.

8. Using the following table of the average annual snowfall and rainfall of Alberta, draw on one of the outline maps several of the curved lines. Choose these from various sections from north to south, so as to cover the province as completely as possible. Mark these lines on the map in red. Along them mark on the map in black the names of the leading cities, towns, or villages through which they run.

Weather Report Station	Whole Year	April to July, Inc.	No. of Years' Observations
Medicine Hat	12.73 in.	6.66 in.	39
Lethbridge	14.32 "	6.95 "	15
Calgary	15.60 "	8.36 "	38
Didsbury	21.90 "	12.09 "	17
Edmonton	17.28 "	9.15 "	40
Beaver Lodge (Peace River)	14.24 "	7.86 "	5

COMPARISONS

1. Arrange the names of the cities in order according to the amount of rain which they get. Begin with the least.

Medicine Hat [illegible] Lodge [illegible] Lethbridge Calgary

Edmonton Didsbury.

2. Arrange the names of the cities in pairs of opposites, the least and the most, etc. Which two are most nearly alike?

Medicine Hat [illegible] Lodge Lethbridge Lethbridge [illegible]

[illegible] Calgary [illegible] are the most [illegible]

3. Arrange the names of the regions of Alberta in order according to the amount of rain which they get. Begin with the least.

Prairie, Bush, Prairie Prairie, Park Park

4. Arrange the names of the seasons in order according to the amount of rain which falls. Begin with the least.

Spring Summer, Spring, fall, winter summer

CHOOSE THE RIGHT ANSWER

These questions have the wrong answers placed after them. Hunt out the right answer to each question. Number it and write it out on a slip of paper. When all are in order, paste the slip of paper over the wrong answers.

1. What is a Chinook? A warm dry wind. ~~It is good for invalids~~.
2. From what direction does it blow? It blows from the south west ~~They hurt the~~ crops.
3. In what part of Alberta does it blow? In Southern Alta From ~~May to July~~.
4. What does it do in winter? It melts the snow. ~~For a week or two at a time~~.
5. What does it do in summer? It scorches the crops ~~In Central Alberta~~.
6. What kind of air have we in Alberta? Dry bracing air. ~~The crops need it then~~.
7. Whom is it good for? It is good for invalids. They ~~leave them out all winter~~.
8. How much snow falls in Southern Alberta? The snowfall is light ~~It melts the snow~~.
9. How long does it remain cold there? For a week or two at a time. ~~Quite a heavy snowfall~~.
10. How do farmers feed their stock? They leave them out all winter ~~A warm, dry wind~~.
11. How does the stock feed? They scrape away the snow ~~Dry, bracing air~~.
12. Where does it rain most in Alberta? In Central Alberta. The snowfall is light
13. When does it rain most? From May to July. As cold as 60 below zero.
14. Why is this fortunate? The crops need it. It blows from the south-west.
15. What often comes in spring and fall? Heavy frosts. ~~They drive~~ cars.
16. Why are these harmful? They hurt the crops. Coasting, skating, and skiing.
17. How cold is it in Northern Alberta? As cold as 60° below zero. It scorches crops.
18. How much snow have they there? Quite. They scrape away the snow.
19. How do the people get about? They drive cars Heavy frosts.
20. What sports have they in winter? Coasting, skating, skiing In Southern Alberta.

You will find on page 2 a record for each day in the month. Fill in this record according to directions.

After you have filled in the record on page 2, write four statements about the weather conditions for that month.

Wind map sketch

TEMPERATURE CHARTS

The following table shows the *highest* and *lowest*, or the *maximum* and *minimum*, temperature at four points in Alberta, widely distant from one another. The record is for the year 1923.

Grade 6.

Place	Max. and Min.	*January*	*May*	*August*	*November*
Medicine Hat........	Maximum	48°	93°	94°	63°
	Minimum	−26°	23°	39°	12°
Calgary..............	Maximum	51°	79°	88°	70°
	Minimum	−25°	22°	36°	2°
Edmonton......	Maximum	33°	81°	84°	65°
	Minimum	−23°	24°	35°	3°
Grande Prairie.......	Maximum	34°	77°	82°	62°
	Minimum	−42°	19°	32°	−4°

1. Underline the right word:

(1) The temperature in Alberta changes *seldom, slowly, suddenly.*

(2) The temperature in Alberta varies *widely, early, hardly.*

(3) In summer it is *cold, moderate, hot.*

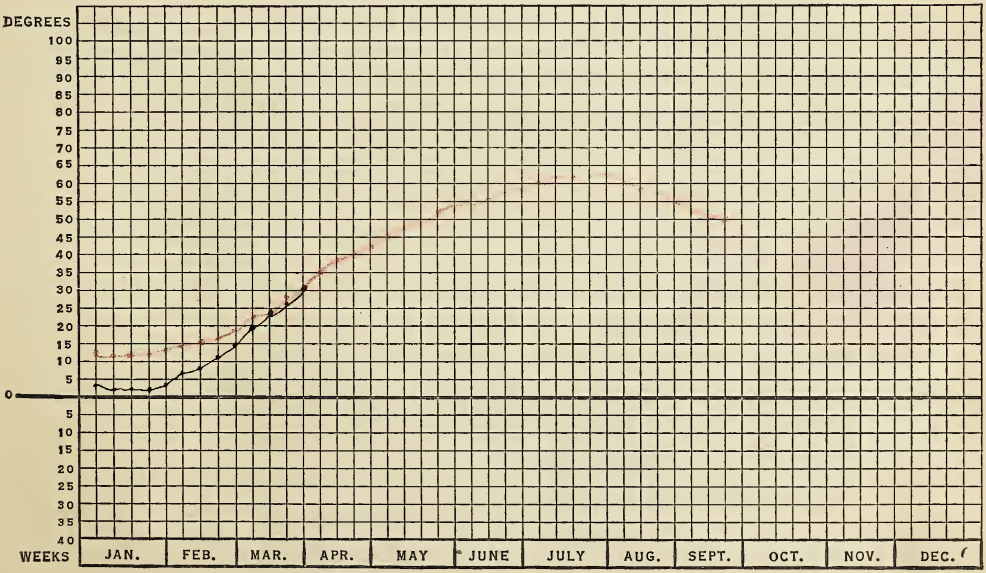
(4) In winter it is *cold, moderate, hot.*

(5) All parts of Alberta have *changing, different, much the same* temperature.

The following table shows the average temperature of the cities of Calgary and Edmonton during the fifty-two weeks of the year. A daily record of the temperature of these two places was kept by the Dominion government for *thirty years*, and it is on this record that the table is based.

Week	Calgary	Edmonton	Week	Calgary	Edmonton	Week	Calgary	Edmonton	Week	Calgary	Edmonton
1.	12	3	14.	35	34	27.	60	60	40.	46	49
2.	11	2	15.	38	37	28.	61	61	41.	44	47
3.	Jan. 11	2	16.	Apr. 40	40	29.	July 61	61	42.	Oct. 41	44
4.	11	2	17.	43	44	30.	61	61	43.	38	40
5.	12	4	18.	45	46	31.	61	61	44.	35	36
6.	14	6	19.	47	49	32.	60	60	45.	31	32
7.	Feb. 15	8	20.	May 49	51	33.	Aug. 59	60	46.	Nov. 28	26
8.	16	11	21.	51	52	34.	57	59	47.	25	23
9.	19	15	22.	52	54	35.	55	58	48.	23	20
10.	22	20	23.	54	55	36.	53	57	49.	22	17
11.	24	24	24.	June 55	57	37.	51	55	50.	Dec. 21	14
12.	Mar. 28	27	25.	57	58	38.	Sept. 50	53	51.	19	11
13.	31	31	26.	58	59	39.	48	52	52.	17	9

2. In filling in the following graph use the foregoing table showing the average weekly temperature of Calgary and Edmonton. Place a dot on the upright line opposite the number at the end of the side line indicating the temperature for that week and connect all the dots to show how the temperature rises gradually in summer time and falls in the winter. Mark the line for Calgary in red and the line for Edmonton in blue on the same paper. How does the temperature of Calgary compare with that of Edmonton when the comparison is based on records extending over thirty years?

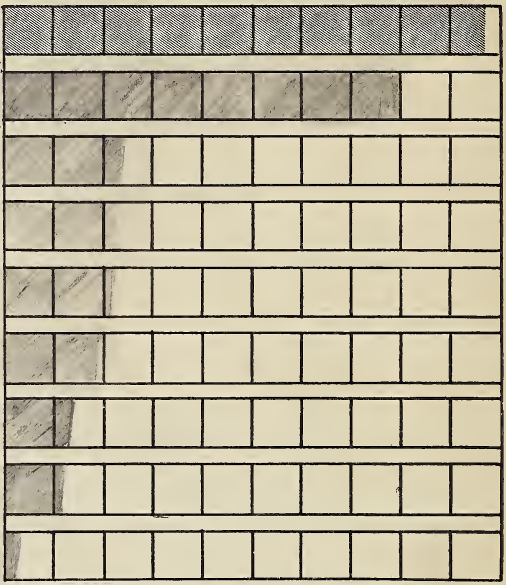


POPULATION

1. The following is the population of each of the provinces of Canada:

Complete the graph. SCALE: 300,000 persons ▨

PROVINCE	POPULATION
Ontario	2,933,662
Quebec	2,361,199
Saskatchewan	820,738
Manitoba	639,056
Alberta	607,584
British Columbia . . .	524,582
Nova Scotia	523,837
New Brunswick . . .	387,876
Prince Edward Island . .	88,615



2. You will find the table of areas of the provinces of Canada on page 10. By using these tables and those of population given above, find out how many people there are to the square mile of territory in each of the provinces. For example, the area of Prince Edward Island is 2,184 square miles, and its population is 88,615 persons. The Island has in round numbers forty-one persons to the square mile:

Ontario has seven persons to the square mile.
Quebec has four persons to the square mile.
Saskatchewan has three persons to the square mile.
Manitoba has two persons to the square mile.
Alberta has one persons to the square mile.
British Columbia has one persons to the square mile.
Nova Scotia has twenty four persons to the square mile.
New Brunswick has 13 + persons to the square mile.

3. Alberta has the fifth (5th) greatest population in Canada. It has almost as great a population as the province of Sask and a somewhat greater popu-

lation than two of the other provinces, Man. and B.C. It has 1/4 as great a population as Ontario and 1/3. as great as that of Quebec.

The population of Canada, according to the latest census is 8,899,779. This number includes, in addition to the provinces given in the table opposite, 4,157 persons in Yukon Territory, 7,988 persons in the Northwest Territories, and 485 members of the Canadian Navy.

The population of Alberta is [illegible] that of the entire Dominion.

4. The population of the countries of Europe named in the graph on page 12 is given below. In the spaces opposite the name of each country fill in the number of people there are to the square mile and show how many more people there are to the square mile there than in Canada.

Country	Population	Persons per square mile	No. of persons per square mile more than in Canada
France	40,744,000	191	
Norway	2,650,000	21	
British Isles	47,365,000		
Italy	40,549,000		
Portugal	6,033,000		
Denmark	3,435,000		
The Netherlands	6,865,000		
Belgium	7,812,000		

1931 731,605

The People.—According to the census of 1926, there are 607,584 persons in Alberta. Of course this number has increased considerably since that time. This is not a very large number for a province the size of Alberta. Compared with the population of Prince Edward Island, it is very small indeed, but it has about the same density of population as Manitoba, while Saskatchewan has one more person to the square mile. In 1901 the province had fewer than 75,000 people. In the ten years from 1911 to 1921 it increased its population by over two-thirds, so that now seven out of every hundred persons in Canada are in Alberta, but nevertheless a large part of the province is still open for settlement. With the increase in the number of railways in those parts not now served, the population should increase rapidly.

About sixty out of every hundred of the people are of British ancestry, and there are about 30,000 French-speaking Canadians in the province. Many settlers from the United States have come to Alberta, and many European nations are represented, including Austrians, Germans, Norwegians, Russians, Swedes, and Ukrainians. The new settlers who do not speak English as their mother tongue are rapidly learning our language, and are proving to be industrious and intelligent citizens.

Thirty-eight out of every hundred of the people of Alberta live in the cities, towns, and villages, but the rural population is increasing more rapidly than the urban population.

The Indians.—The greater number of the Indians in Alberta live under the control of the Dominion government, on reserves, where they are engaged for the most part in farming. There are, however, a small number in the northern part of the province who wander over the country as did their ancestors hundreds of years ago, and who make their living by hunting and fishing. The total extent of the reserves, eighty-six in number, is about one and a quarter million acres, but only about 55,000 acres are under cultivation.

5. Name at least five places in Alberta that have Indian names. Try to find, and write out the meaning of each name.

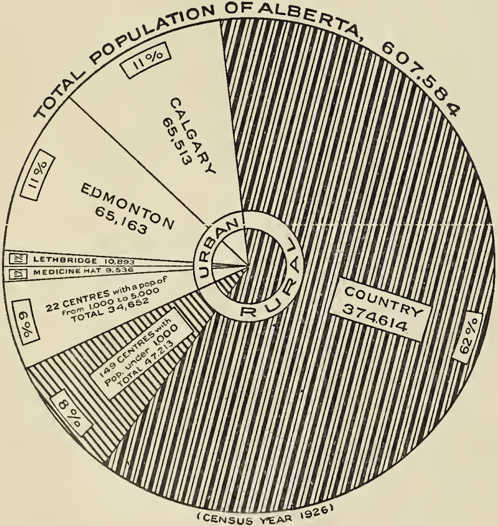
NAME OF PLACE	MEANING
[illegible]	Stony Crossing
[illegible]	[illegible]
[illegible]	where there are reeds
[illegible]	Elk.
[illegible]	Battle

Rural and Urban Population.—Study very carefully the diagram on this page. It shows in the clearest possible way the distribution of the population between the rural, or country, districts on the one hand and the cities, towns, and villages on the other.

6. How many people are there in the province, other than those who live in Calgary, Edmonton, Lethbridge, and Medicine Hat? 456,479.

7. The following 26 cities and towns in Alberta have a population of over 1,000. Locate on one of the outline maps each of the cities and towns listed below.

Notice from an examination of the diagram on this page how the population is related to the four cities and to the 22 centres given below. These cities and centres in themselves include 35 out of every hundred of the entire population.



68,761
79,197

Calgary	65,513	Ponoka	1,931
Edmonton	65,163	Wetaskiwin	1,884
Lethbridge	10,893	Raymond	1,799
Medicine Hat	9,536	Vegreville	1,726
Drumheller	2,578	Macleod	1,715
Red Deer	2,021	Edson	1,493
Coleman	2,044	Hanna	1,400
Cardston	2,034	High River	1,377
Camrose	2,002	Taber	1,342

Vermilion	1,203	Wainwright	1,028
Magrath	1,202	Stettler	1,127
Lacombe	1,151	Olds	1,003
Blairmore	1,069	Pincher Creek	1,003

AGRICULTURE

Agriculture is the leading industry in Alberta, and on it most of the wealth of the province is founded. Over sixty out of every hundred of the people depend upon it for a living. About 30,000,000 acres are now occupied as farms, and the value of the products of this land in 1925 was about $245,000,000. Included in these products are grain, farm animals, vegetables, fodder, dairy products, poultry, eggs, honey, and indeed everything that is produced on the farm, whether that farm be large or small. Just think of what would happen to Alberta if all the farms were abandoned and production should cease entirely. *See map on page 46.*

The prairies of Southern Alberta are particularly well suited to the growing of grain and fodder crops. The soil is rich and free from stones, the hours of sunshine are many, and the late summers are dry. The result is that the larger part of the wheat and almost one-half of the oats produced in Alberta are grown in the southern district. Barley, rye, and flax are grown in all parts of the province, but in much smaller quantities than wheat and oats. There are certain districts in Southern Alberta where the rainfall is not enough for the growing of good crops year in and year out. In these sections two methods are used for preserving the moisture and increasing the water supply. These are *irrigation* and *dry-farming.*

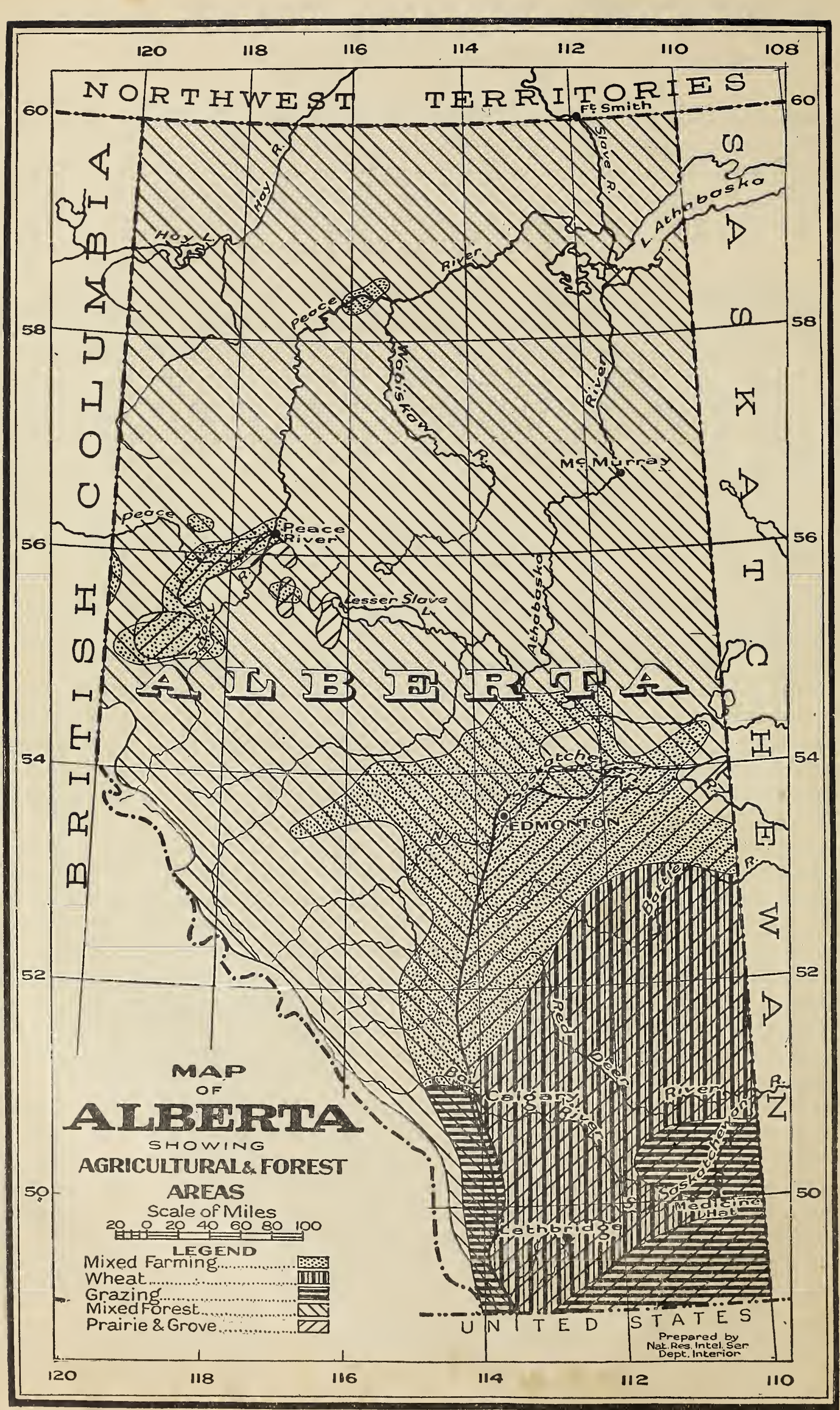
Irrigation means the bringing of water direct to the soil. In dry-farming the farmer leaves his land idle every second or third year, and thus he has more than one year's moisture for one year's crop. He ploughs the land deeply, so that the rain will sink in. He then works over the surface of the land carefully to prevent the moisture from making its way to the surface and evaporating. The use of dry-farming and irrigation has made possible the raising of heavier and better crops.

Fortunately, Southern Alberta is well supplied with rivers from which to draw water for irrigation purposes. In bringing the water to the land various methods are used. In some cases, the level of a river is raised by building a dam, and the water is led off through canals. In other cases, lakes are used to store the water. From the canals small ditches are dug to the land to be irrigated. Then, either the land is flooded or the water is allowed to run across it in furrows a few feet apart. Irrigation may take place as often as is necessary during the season. It should be remembered that not every farm can be irrigated, as irrigation depends upon the land being itself level and below the level of the canal. Irrigation is also somewhat costly, as it is necessary to pay for the water as well as for the labor of digging the ditches and preparing the land for the water.

As a further result of dry-farming and irrigation, stock-raising has become a leading industry in Southern Alberta. Huge crops of barley, oats, alfalfa, and roots are raised, and on these cattle and swine are fed and fatted for market. Dairying has also made great progress in recent years, although it is not so important as it is farther north in Central Alberta. The growing of sugar-beets is taking up the attention of the farmers along the United States boundary. A large sugar-beet factory is now in operation at Raymond.

In addition to the cattle raised on the farms, large numbers of sheep range over the drier ions of Southern Alberta. They are easily fed and are valuable not only for their flesh also for wool.

In days not so long ago, almost the whole of Southern Alberta was given up to ranching. hat time, the cattle and horses roamed over the prairie in huge herds, using not only the


MAP OF ALBERTA SHOWING AGRICULTURAL & FOREST AREAS
Scale of Miles
20 0 20 40 60 80 100
LEGEND
Mixed Farming
Wheat
Grazing
Mixed Forest
Prairie & Grove
NORTHWEST TERRITORIES
BRITISH COLUMBIA
SASKATCHEWAN
UNITED STATES
ALBERTA
Ft. Smith
Slave R.
L. Athabaska
Hay R.
Hay L.
Peace River
Wabiskaw R.
River
McMurray
Peace
Peace River
Smoky R.
Lesser Slave L.
Athabaska
Saskatchewan
EDMONTON
Battle R.
Red Deer River
Bow
Calgary
River
R.
S. Saskatchewan
Medicine Hat
Lethbridge
120
118
116
114
112
110
108
60
58
56
54
52
50
Prepared by Nat. Res. Intel. Ser. Dept. Interior

ranch land but also the open range rented from the government. They were allowed to live out all winter, feeding on the dry prairie grass and finding shelter during cold or stormy weather in the bluffs or in the timbered river valleys. Now, however, all this is changed. The introduction of dry-farming and irrigation has turned the prairie into an area of small grain and stock farms, each with its own wire fence. There are no more open ranges, and the ranchers have been forced back into the foothills. Even there the ranches are comparatively small and are for the most part fenced. There is in the foothills, however, still considerable open range that may be used.

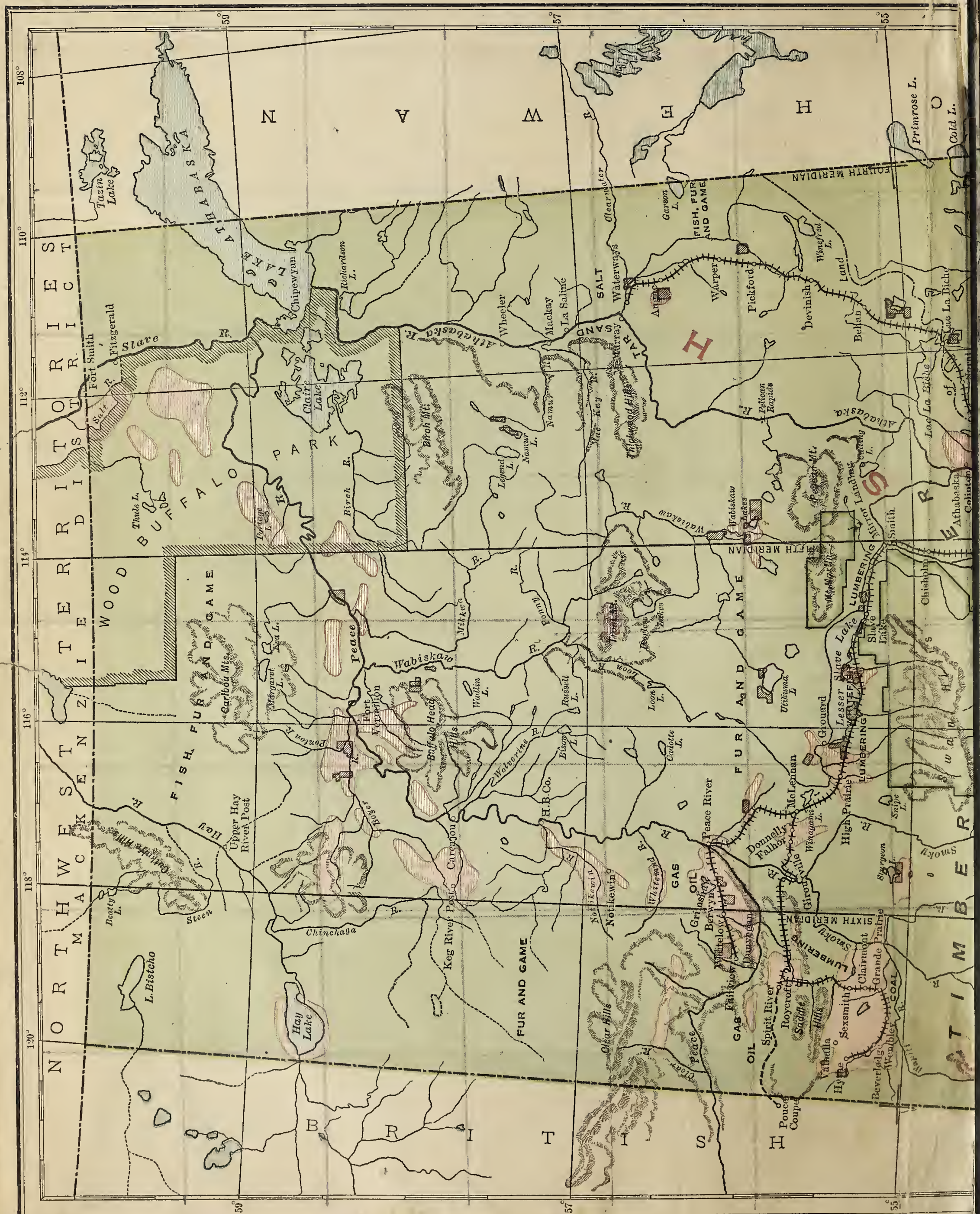
The foothills make an ideal ranching country. The hills are covered with excellent grass; there is plenty of clear, fresh water; and the wooded belts in the valleys and coulees shelter the stock from cold and storm. The cattle and horses still remain in the open in the winter months, but the ranchers now usually put up sufficient hay to feed their stock through the year. The warm Chinook winds are of great benefit during the winter to all ranchers in the foothills.

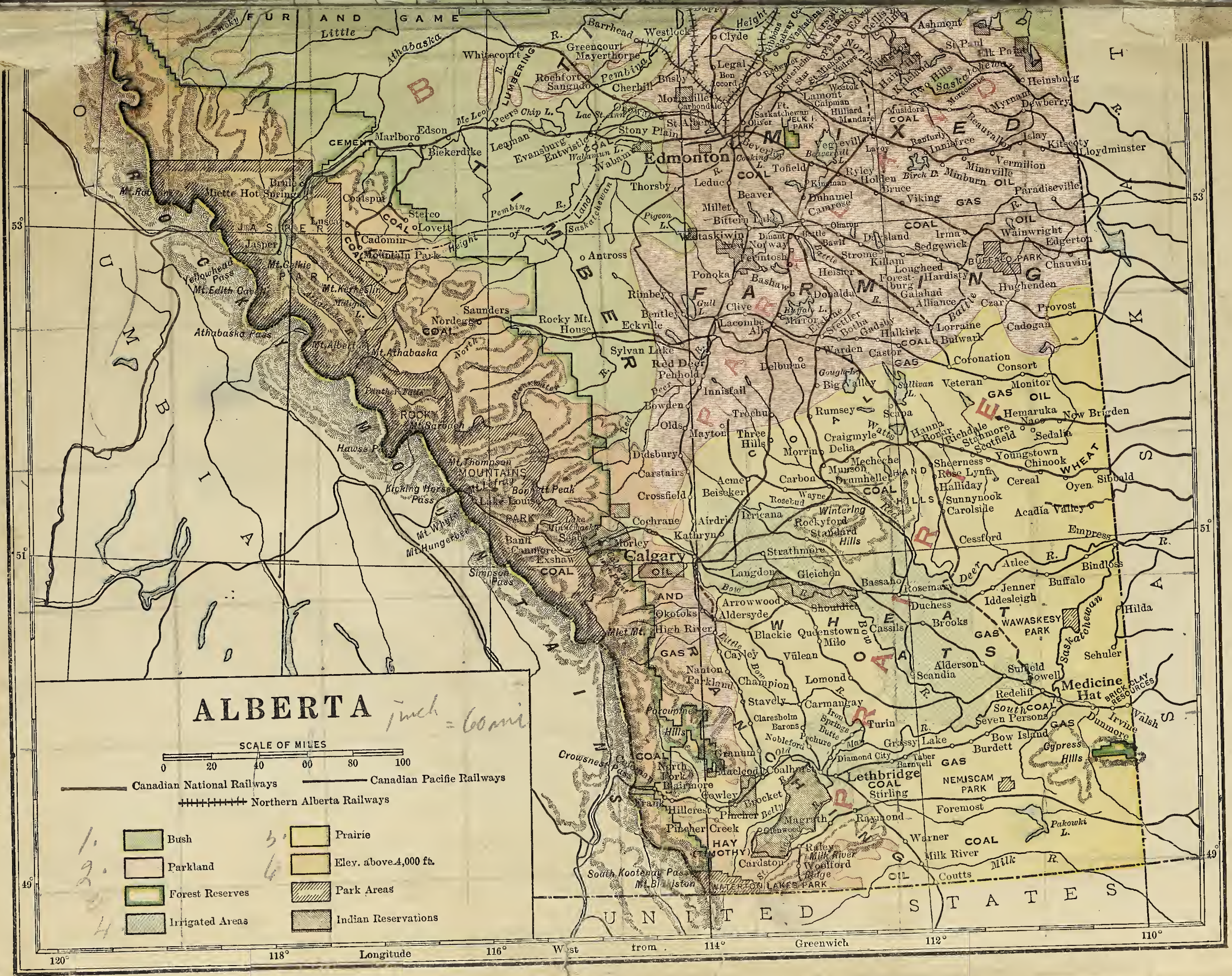
In Central Alberta the surface and soil are more particularly suited to *mixed farming.* This district is not broad, open prairie, but rather rolling land, with many sloughs, much brush, clumps of trees, and rough land. Wheat is grown in large quantities, but the chief attention is given to the raising of fodder crops, such as oats, barley, hay, and roots for feeding cattle, sheep, and swine. Vegetables for the home market are a valuable crop. Dairying is a most important industry. In most cases the cream is sold to the creameries, where it is manufactured into butter or cheese. The raising of poultry has proved very profitable, and Alberta eggs find a ready market in British Columbia and in the Orient. In one year over 550,000 dozens of eggs were handled by the government marketing service. There are at present about 7,000,000 hens, turkeys, geese, and ducks on the farms of Alberta, and the value of the poultry and poultry products amounts annually to about $10,000,000. The province exports each year about 11,000,000 dozens of eggs. On many of the farms are hives of bees, the honey from which finds a ready sale back at home and in the neighboring markets.

There has been a very great increase within recent years in the butter and cheese manufactured and in the poultry raised. One reason for this is that the farmers are finding that there is a large demand for these products in the cities, towns, and villages of the province. This is called *supplying the local demand.* Moreover there is an increasing demand for such products in the other provinces of Canada. Alberta now sends large quantities of turkeys and chickens to Eastern Canada, and millions of dozens of eggs and heavy shipments of butter and cheese are sent to British Columbia and also across the Pacific Ocean to China and Japan. This is known as the *export of products.*

The southern part of Northern Alberta is very much the same as Central Alberta and produces much the same crops. The entire district, however, is not so well suited to agriculture as either of the sections to the south. There are many wide elevations and wooded areas, and much muskeg and rough land. But in several parts there are districts which are as well suited to agriculture as are many parts of Central Alberta. The best of these is the *Peace River Country,* which lies about 250 miles north-west of Edmonton. The country there is very much like that around Edmonton. The surface is level, with scrub and willow bluffs, and the soil is black and heavy. Wheat, barley, and oats yield abundantly. The rich grass in the sloughs and other wild plants provide excellent food for cattle. Although far north, the Peace River District promises to be one of the best mixed-farming sections of Alberta.

The greater part of the oats and barley grown in Alberta is used within the province, but about four-fifths of the enormous wheat crop is sold in the markets of the world. How then does Alberta wheat reach these markets? The answer is by means of the wonderful elevator system with which you are familiar, and with the help of the railways with which the province is so well provided. When the farmer has threshed his grain, he takes it to the elevator, where


NORTHWEST TERRITORIES
MACKENZIE DISTRICT
WOOD BUFFALO PARK
SASKATCHEWAN
BRITISH
LAKE ATHABASKA
Tazin Lake
Fort Smith
Fitzgerald
Slave R.
Salt R.
Chipewyan
Richardson L.
Claire Lake
Birch Mt.
Birch R.
Thule L.
Portage L.
Athabaska R.
Wheeler
Mackay
La Saline
McMurray
TAR SAND
SALT
Waterways
Clearwater
Garson L.
FISH, FUR AND GAME
Anzac
Warper
Pickford
Devinish
Winefred L.
Land
Behan
Lac La Biche
Primrose L.
Cold L.
FOURTH MERIDIAN
FIFTH MERIDIAN
SIXTH MERIDIAN
Thickwood Hills
Namur L.
Legend L.
Pelican Rapids
Pelican Mt.
Calling L.
Wabiskaw Lakes
Wabiskaw R.
Mirror Landing
Smith
Athabaska
Colinton
Chisholm
LUMBERING
Slave Lake
Lesser Slave Lake
Grouard
Utikuma L.
Loon L.
Loon R.
Peerless L.
Trout Mt.
Pony R.
Mikkwa R.
Wabiskaw
Peace R.
Fort Vermilion
Buffalo Head Hills
Caribou Mts.
Margaret L.
Eva L.
FISH, FUR AND GAME
FUR AND GAME
Wadlin L.
Russell L.
Bison L.
Cadotte L.
Wolverine R.
H.B. Co.
Peace River
McLennan
Donnelly
Falher
Winagami L.
High Prairie
Snipe L.
Girouxville
Smoky R.
Sturgeon L.
Notikewin R.
Notikewin
Whitemud R.
GAS
OIL
Grimshaw
Berwyn
Whitelaw
Dunvegan
Fairview
GAS
OIL
Spirit River
Royeroft
Saddle Hills
Sexsmith
Clairmont
Grande Prairie
COAL
Valhalla
Hythe
Beaverlodge
Wembley
Pouce Coupe
Clear Hills
Clear R.
Keg River Post
Carcajou
Boyer R.
Ponton R.
Upper Hay River Post
Hay R.
Cameron Hills
Steen R.
Beatty L.
Chinchaga R.
L. Bistcho
Hay Lake
ATIMBER RESERVE
Swan Hills
108°
110°
112°
114°
116°
118°
120°
59°
57°
55°


ALBERTA
1 inch = 60 mi
SCALE OF MILES
0 20 40 60 80 100
Canadian National Railways
Canadian Pacific Railways
Northern Alberta Railways
1. Bush
2. Parkland
3. Forest Reserves
4. Irrigated Areas
3. Prairie
4. Elev. above 4,000 ft.
Park Areas
Indian Reservations
FUR AND GAME
LUMBERING
TIMBER
MIXED FARMING
FARMING
PRAIRIE
WHEAT
WHEAT AND HILLS
RANCHING
HAY (TIMOTHY)
COAL
GAS
OIL
CEMENT
BRICK CLAY RESOURCES
JASPER PARK
ROCKY MOUNTAINS PARK
ELK I. PARK
BUFFALO PARK
WAWASKESY PARK
NEMISCAM PARK
WATERTON LAKES PARK
Edmonton
Calgary
Lethbridge
Medicine Hat
Red Deer
Lloydminster
Wainwright
Camrose
Drumheller
Banff
Jasper
Athabaska R.
Pembina R.
Saskatchewan R.
Red Deer R.
Bow R.
Milk R.
Mt. Robson
Mt. Edith Cavell
Mt. Athabaska
Mt. Thompson
Mt. Assiniboine
Yellowhead Pass
Athabaska Pass
Howse Pass
Kicking Horse Pass
Simpson Pass
Crowsnest Pass
South Kootenay Pass
Mt. Blakiston
Cypress Hills
Porcupine Hills
COLUMBIA
BRITISH COLUMBIA
SASKATCHEWAN
UNITED STATES
53°
51°
49°
120°
118°
116°
114°
112°
110°
Longitude West from Greenwich

it is stored until cars are ready for shipment. Of course, he may hold his grain until he is ready to sell it, and he may even engage cars himself and load his grain in these cars from platforms provided by the railway company. But it is all the same in the end. There are at present about 1,000 elevators in Alberta, and these, if filled to the top, would hold about 40,000,000 bushels of wheat. In addition, the Dominion government has large elevators at Calgary and at Edmonton, in which the wheat may be stored until needed.

The wheat of Alberta is shipped to Europe in two ways—(1) by way of Winnipeg to Port Arthur or Fort William, and (2) by way of Vancouver on the Pacific coast. If the wheat is shipped by the eastern route, it reaches Europe by way of the Great Lakes and the St. Lawrence River. If it is shipped by the western route, it reaches Europe by way of the Panama Canal, which has been cut across the Isthmus of Panama in Central America. More and more wheat is being shipped each year through the Panama Canal.

Read over the text on the surface features of Alberta on pages 16 to 22, and also your own notes. Refer to the outline map on which you have located the physical divisions of Alberta.

1. You can obtain from the Department of Agriculture, Edmonton, a map showing the irrigated districts in your province. On the outline map on the opposite page mark with a red pencil the districts now provided with irrigation works and with a blue pencil those partially provided with irrigation works.

2. What rivers and lakes are drawn upon specially for the water supply? __________

____

____

Mark these on the outline map.

3. Gather all the information possible and tell four things about any one irrigation project in Alberta. Note particularly where the water is obtained, how and where it is stored, and how it reaches the farms. __________

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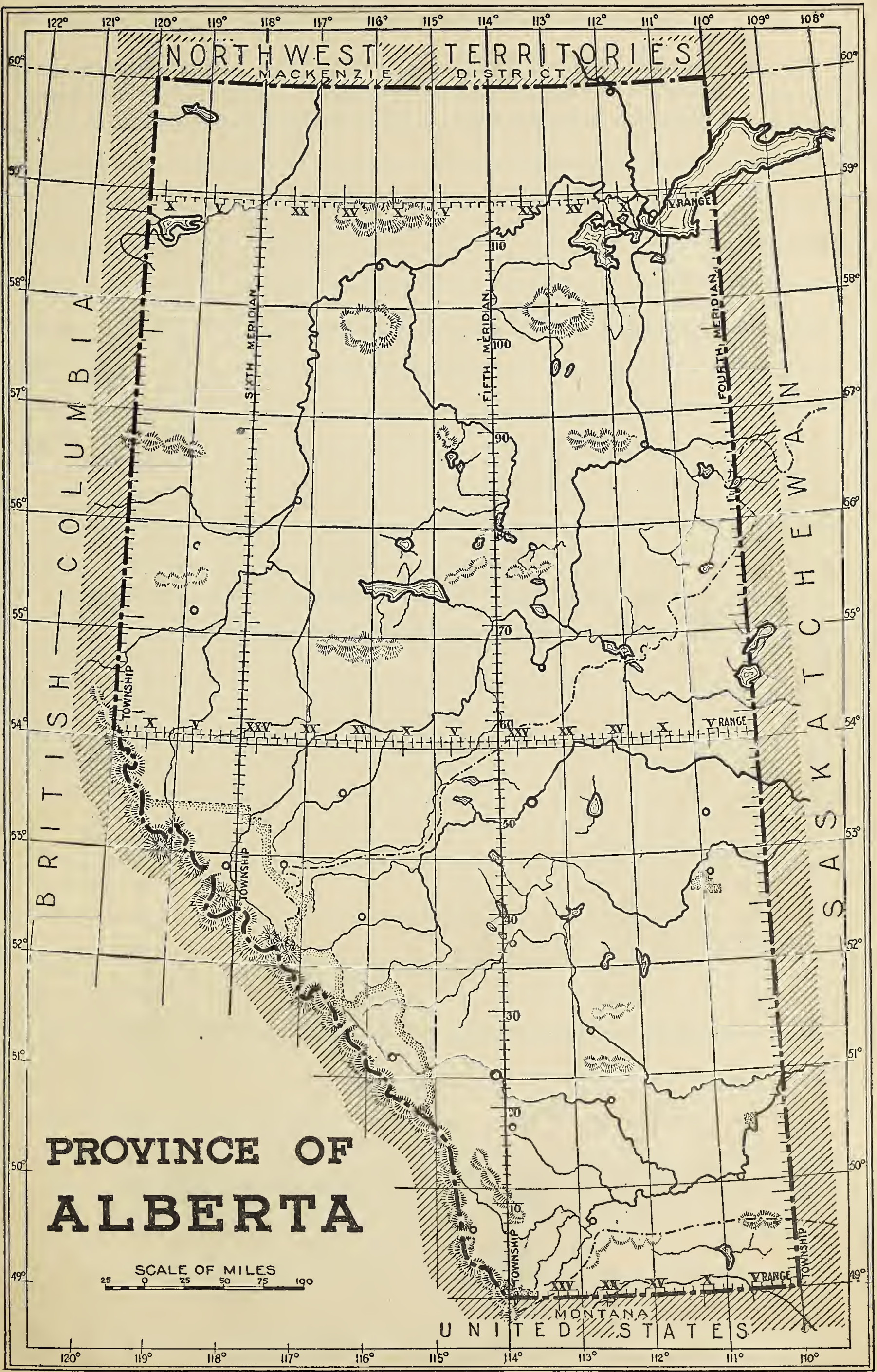


PROVINCE OF ALBERTA

4. Why is irrigation necessary in Southern Alberta? What are the advantages to the farmers of the use of irrigation? What are the disadvantages? What changes have taken place in farming since irrigation has come into use? Answer the foregoing questions in a single connected paragraph.

5. What is meant by dry-farming? Why is it necessary in Southern Alberta? What are the benefits of its use to the farmer? Answer in a single paragraph.

6. Why is the foothill section of Alberta so well suited to ranching?

7. Find out all you can about ranching in the foothills. Tell about this in a single paragraph.

8. What is meant by mixed farming? Why is Central Alberta so well suited for this kind of farming? What are its benefits to the farmers?

9. Why should farming in Central Alberta differ from that in Southern Alberta?

10. Find out all you can about the elevator system of Alberta. Describe it in a connected paragraph.

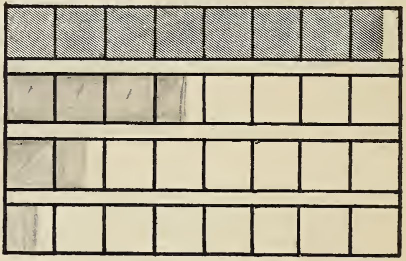
COMPARISON WITH OTHER PROVINCES

As Alberta is one of the great agricultural provinces of Canada, it is important that you should know just where it stands in this respect in comparison with the other provinces. A careful examination of the following graphs will enable you to understand just how important a part of Canada your province is.

VALUE OF WHEAT PRODUCTION—1928

Complete the graph. Scale: $30,000,000 ▨

PROVINCE	VALUE
Saskatchewan	$233,617,000
Alberta	117,008,000
Manitoba	48,192,000
Ontario	22,716,000

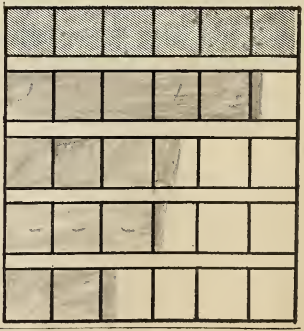


1. Where does Alberta stand as a wheat-producing province? 2nd. [illegible]

VALUE OF OAT PRODUCTION—1928

Complete the graph. Scale: $10,000,000 ▨

PROVINCE	VALUE
Saskatchewan	$59,296,000
Ontario	51,404,000
Alberta	33,538,000
Quebec	30,773,000
Manitoba	22,952,000



2. Where does Alberta stand as an oat-producing province? [illegible]

3. Compare Alberta with Saskatchewan as to the value of the wheat and oats produced by each. ~~Sa~~ 1/4 × Al. - wheat. 1 3/4 Oats.

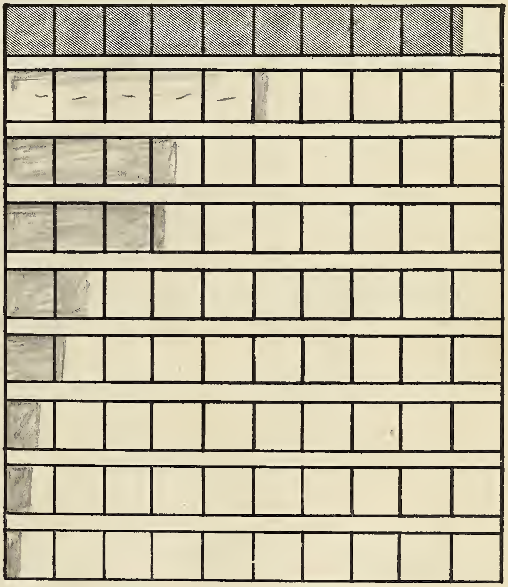
4. Compare Alberta with Manitoba as to the value of the wheat and oats produced by each. 2 3/4 × Man wheat. 1 1/3 oats.

VALUE OF CATTLE—1928

Complete the graph.

Scale: $20,000,000 ▨

PROVINCE	VALUE
Ontario	$183,112,000
Quebec	100,808,000
Alberta	68,803,000
Saskatchewan	62,295,000
Manitoba	37,771,000
British Columbia	22,975,000
Nova Scotia	13,228,000
New Brunswick	9,156,000
Prince Edward Island	5,661,000



5. Where does Alberta stand as a cattle-raising province? 3rd.

6. Compare Alberta with Saskatchewan as a cattle-raising province. Al. 1 1/15 × Sask.

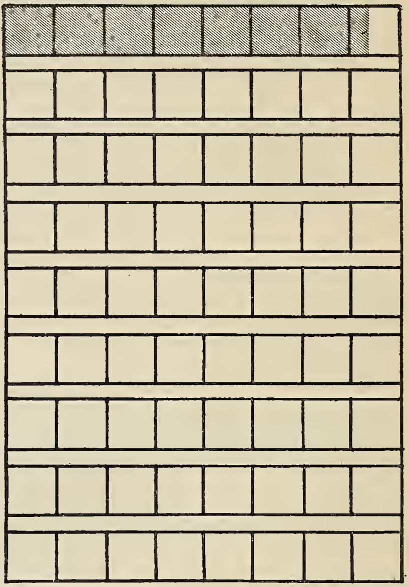
7. Compare Alberta with Manitoba as a cattle-raising province. Al. 1 3/4 × Man.

Complete the graph.

VALUE OF HORSES—1928

Scale: $10,000,000 ▨

PROVINCE	VALUE
Saskatchewan	$73,830,000
Ontario	60,368,000
Quebec	38,018,000
Alberta	37,672,000
Manitoba	26,354,000
New Brunswick	6,208,000
Nova Scotia	5,675,000
British Columbia	3,943,000
Prince Edward Island	3,401,000

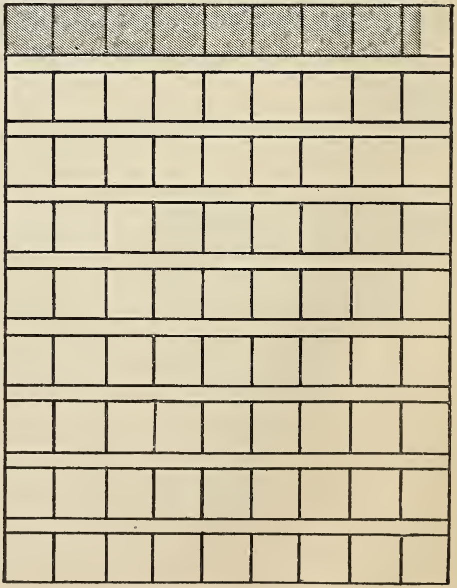


VALUE OF HOGS—1928

Complete the graph.

Value: $3,000,000 ▨

PROVINCE	VALUE
Ontario	$24,943,000
Quebec	14,669,000
Alberta	9,039,000
Saskatchewan	8,430,000
Manitoba	5,013,000
New Brunswick	1,695,000
British Columbia	1,019,000
Nova Scotia	954,000
Prince Edward Island	833,000

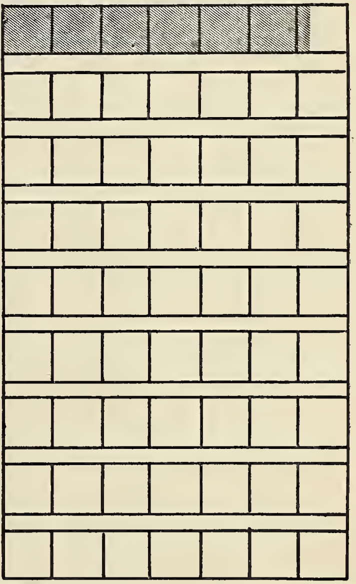


VALUE OF SHEEP—1928

Complete the graph.

Scale: $2,000,000 ▨

Province	Value
Ontario	$12,320,000
Quebec	8,272,000
Alberta	5,348,000
Nova Scotia Sask	2,034,000
British Columbia	2,029,000
Saskatchewan	1,831,000
Manitoba	1,440,000
New Brunswick	1,294,000
Prince Edward Island	962,000



8. Where does Alberta stand as a horse-raising province? 4th
9. Where does Alberta stand as a hog-raising province? 2nd
10. Where does Alberta stand as a sheep-raising province? 3rd
11. Compare Alberta with Saskatchewan as a horse-raising province.

12. Compare Alberta with Saskatchewan as a hog-raising province.

13. The four graphs just completed give the value of the cattle, horses, hogs, and sheep of the nine provinces of Canada for the year 1928. Add together the value of the cattle, horses, hogs, and sheep produced in each of the nine provinces and name the provinces in the order of the total value of production.

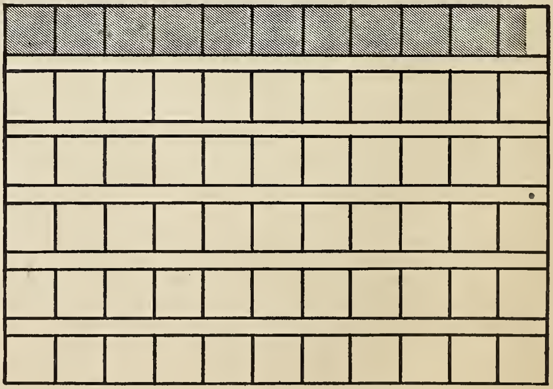
14. Write a brief paragraph on the importance of stock-raising in Alberta.

FIELD CROPS—1928

Complete the graph.

Scale: 2,000,000 acres ▨

Province	Acres
Saskatchewan . . .	21,064,000
Alberta	11,728,000
Ontario	10,358,000
Quebec	6,893,000
Manitoba	6,744,000
New Brunswick . .	900,000



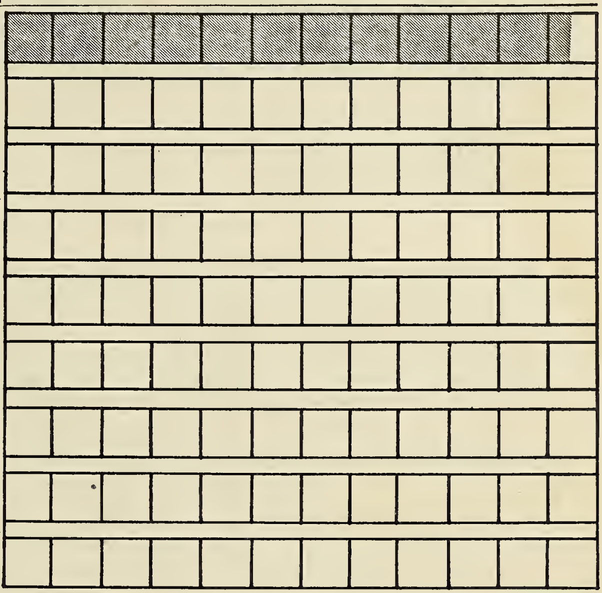
15. Where does Alberta stand as a producer of field crops?

VALUE OF BUTTER PRODUCTION—1927

Complete the graph.

Scale: $3,000,000 ▨

Province	Value
Ontario	$34,387,000
Quebec	26,135,000
Saskatchewan . .	9,780,000
Alberta	8,710,000
Manitoba . . .	7,760,000
Nova Scotia . . .	3,893,000
British Columbia	2,556,000
New Brunswick . .	1,540,000
Prince Edward Island	1,383,000



16. Where does Alberta stand as a butter-making province? ____________________

MINING

The most important mineral found in Alberta is coal. The coal beds cover an enormous area, estimated at at least 36,000 square miles. Can you think what it means when we say that there are over 640 billions of tons of coal lying beneath the surface of our province? Think what this means in the future. Of course, only a very small amount is being mined at present. The value of the coal taken from the mines in 1928 was only about $24,000,000. But as time goes on, as the province increases in population and new markets are opened up, the output is bound to increase. The graph on page 62 will show you how much greater the coal resources of Alberta are than those of the other provinces.

The colored map in the centre of the book shows you the districts in Alberta where coal is actually being mined, or where it is known to exist in such quantities as will pay for mining it. You will notice that a large part of the province has coal underlying its surface. You can scarcely realize the importance of this to Alberta and to Canada as a whole. The chief difficulty at present is the cost of transportation of the coal to Ontario and Quebec, where there is no coal mined. But it is expected that this difficulty will shortly be overcome.

In some parts of the province the coal seams are exposed along the banks of the rivers, or are so close to the surface that the coal may be dug up and loaded on wagons or directly on the cars. In most parts, however, the seams are very thick and are some distance below the surface. The coal areas are not confined to any one section of the province, but are found in many districts. In the Rocky Mountains the most important mines are at *Blairmore* and *Coleman* in the *Crowsnest Pass*, at *Canmore*, at *Nordegg*, and in the *Mountain Park* district. In Southern Alberta the chief mines are at *Lethbridge*, *Taber*, and *Drumheller*. In Central Alberta there are many mines at *Edmonton* and in the vicinity, and also at *Tofield* and *Stettler*. In Northern Alberta there are mines at *Grande Prairie* and at several other points.

A great deal of the coal mined in the province is required for home use, but now huge quantities are being sent to Saskatchewan and Manitoba. Much coal is also sent to the northern part of British Columbia, and even to the United States. Alberta coal is used on all the railways in the three Prairie Provinces.

You will realize just how important a coal-producing province Alberta is when you have filled in the graph on page 62.

COAL MINING IN ALBERTA

Coal is formed from trees and plants which have been buried and pressed upon for ages by enormous weights of earth. The heavier the weight and the longer the time it has pressed, the harder the coal. Alberta has three grades of coal. The Kootenay coal measures lie in or close to the Rocky Mountains. They have had the weight of the mountains pressing upon them. They are the oldest, too, and therefore their coal is the hardest. The Belly River coal measures run from the mountains across Southern Alberta into Saskatchewan. They cover 26,000 square miles and have coal which is not so hard. The Edmonton coal measures lie in a broad trough which runs north-west to Lesser Slave Lake. The Edmonton measures are young and have not had such great weights upon them, so the coal is soft. It is called lignite.

The Red Deer River has cut its valley right through the Edmonton coal measures. The valley sides are high and steep, and the seams of coal show plainly. In the Drumheller district 650 feet of beds show along the river banks, and the coal seams are shown along the valley-sides of the tributaries of the Red Deer throughout the country which is called the Badlands.

In the Drumheller district there are ten seams of coal laid in the beds of rock. The lowest seam is called number one, the highest number ten. The seams are separated by layers of rock and earth. Mines are being worked in seams one, two, five, and seven. Number one seam is the thickest. It is from six to seven feet thick. Fourteen mines are being worked in this seam.

When first taken out, the coal from the Drumheller district is blocky and bright. After it has been lying in the open air for a time, it becomes dull. This coal has a good deal of moisture in it. When exposed to the air, the moisture evaporates, and the coal cracks into blocks which are more or less square. Sometimes there are stones or layers of mineral in the coal, but it is not difficult to take these out and to make clean, strong-burning coal for market.

As almost the whole province of Alberta is underlaid with coal, there are mines in many places. In some places the coal seams come so close to the surface of the ground that people simply dig it as they dig potatoes and carry it away in their wagons. At Sterco, south-west of Edson, a great hole shows where the coal has been taken out. About the hole the black walls rise in sparkling tiers. At this mine they put from one to ten sticks of dynamite under the bank and blow it up. Then they gather up the great lumps of coal with steam shovels, load them on cars, and ship them away.

At Mountain Park the coal shafts run right through a hill from one side to the other. The hill nearest the town has had nearly all the coal taken out of it, and miners are now at work in the second hill. A network of small shafts runs right and left off the main shaft. Tracks are laid down along the main shaft, and horses draw little cars along into the shaft. When they are loaded, thirty cars are hooked together, and a powerful engine draws the cars out of the mine and into a bridge-like platform, which is called the tipple.

The cars run along the tipple into a shed, where they are weighed. A careful account of the weight must be kept because the men are paid so much per ton for the coal that they get out. The cars are next dumped, and the coal passes down a chute to a wide endless belt, which revolves around a table. By the table stand men who pick the rock out of the coal. From the table the clean coal passes down a chute into the freight cars waiting on the railway line, which runs beneath the tipple. From four hundred to one thousand tons a day are mined at Mountain Park.

At Coleman, in the Crowsnest Pass, coal is mined in the Kootenay coal measures. These mines are deep down in the earth. There are two large mining companies there. At nine o'clock in the evening a whistle blows to tell the men that the mine will be working the next day. At six in the morning another whistle rouses the town. The men walk up the mountain stream to the wash-house, where they change into their working clothes. They file past the blacksmith shop, where they get their picks, axes, and drills, and then they "time-in" and are given Edison safety lamps.

After the pit bosses and fire bosses have assigned the work for the day, the men ride down to the second, third, or fourth levels. Here there are rows of "entries", openings in the walls of the shaft. Each man takes his own "entry", climbs up the chute to the "face" or wall of coal, and begins to pick or drill it out. The coal is loaded on cars, which are drawn by horses or donkey-engines to the slope, where they are raised by steel cables to the first level. From there they are hauled by engines through a mile-long tunnel to the tipple, where the coal is screened and held in bins till it is loaded into the freight cars.

In most mines there is a good deal of work in repairing and expanding the mines. Each new shaft must be very carefully propped and provided with fresh air. Even so, cave-ins and explosions sometimes occur. The miners take their lives in their hands every time they go to work.

A FLYING TRIP

Pretend that you are an inspector of mines travelling about Alberta in an aeroplane. Describe your journey by filling in the blanks in the following sentences:

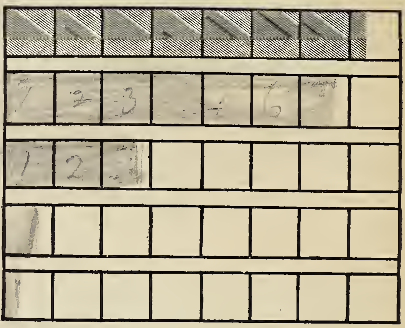
I left Edmonton at__________o'clock and flew____________to Mountain Park. I walked____________at one side of the____________ and ____________at the other ____________. I saw the____________draw the little cars of__________along. I rode on a car to the____________. I saw the coal____________and____________and________. Next I flew to Red Deer. I passed the city of________________. I flew over the town of ____________________. I flew____________along the________________River.____ I saw the____________ ____________ in the river banks. I inspected the mines at________ ____________. I saw a__________foot coal____________. I then flew on to Coleman. I passed the towns of________________ and ________________and ______________ and I flew over the city of____________________. I flew up the______________Pass. I watched the men take out coal with________________and________________ and ________________. I watched other men______________the shaft to keep it from ________________. Coal mining is very____________work.

COAL PRODUCTION—1928

Complete the graph.

SCALE: 1,000,000 tons ▨

PROVINCE	TONS
Alberta	7,335,000
Nova Scotia	6,742,000
British Columbia	2,805,000
Saskatchewan	464,000
New Brunswick	208,000



1. Where does Alberta stand as a coal-producing province?

2. On one of the outline maps locate the chief coal-producing districts.

3. What is the advantage to Edmonton and Calgary of the nearness of the coal mines?

4. To what places, outside of Alberta, is the coal of the province sent?

5. In Ontario and Quebec there is no coal mined. Why is not more Alberta coal shipped to these two provinces?

6. For what other purposes than for fuel is coal used in Alberta?

7. What is the advantage to Alberta of her abundant supply of coal?

TEN VALUABLE MINERALS FOUND IN ALBERTA

Natural gas is found in many parts of Alberta. The fields at *Viking* supply Edmonton with gas for lighting and heating purposes, and for factory use. Calgary is supplied from the fields at *Bow Island* and *Okotoks*. From Bow Island gas is also piped to Lethbridge and Macleod. New fields have recently been discovered at *Barnwell* and *Foremost*. At Medicine Hat natural gas has long been in use and has resulted in the building up of many manufactures in the city. Many wells have been discovered at various points too far removed from industrial centres to allow of their operation. At *Pelican Rapids*, on the Athabaska, for example, there are several such wells. Gas has also been found at *Wetaskiwin*, *Ponoka*, and *Tofield*.

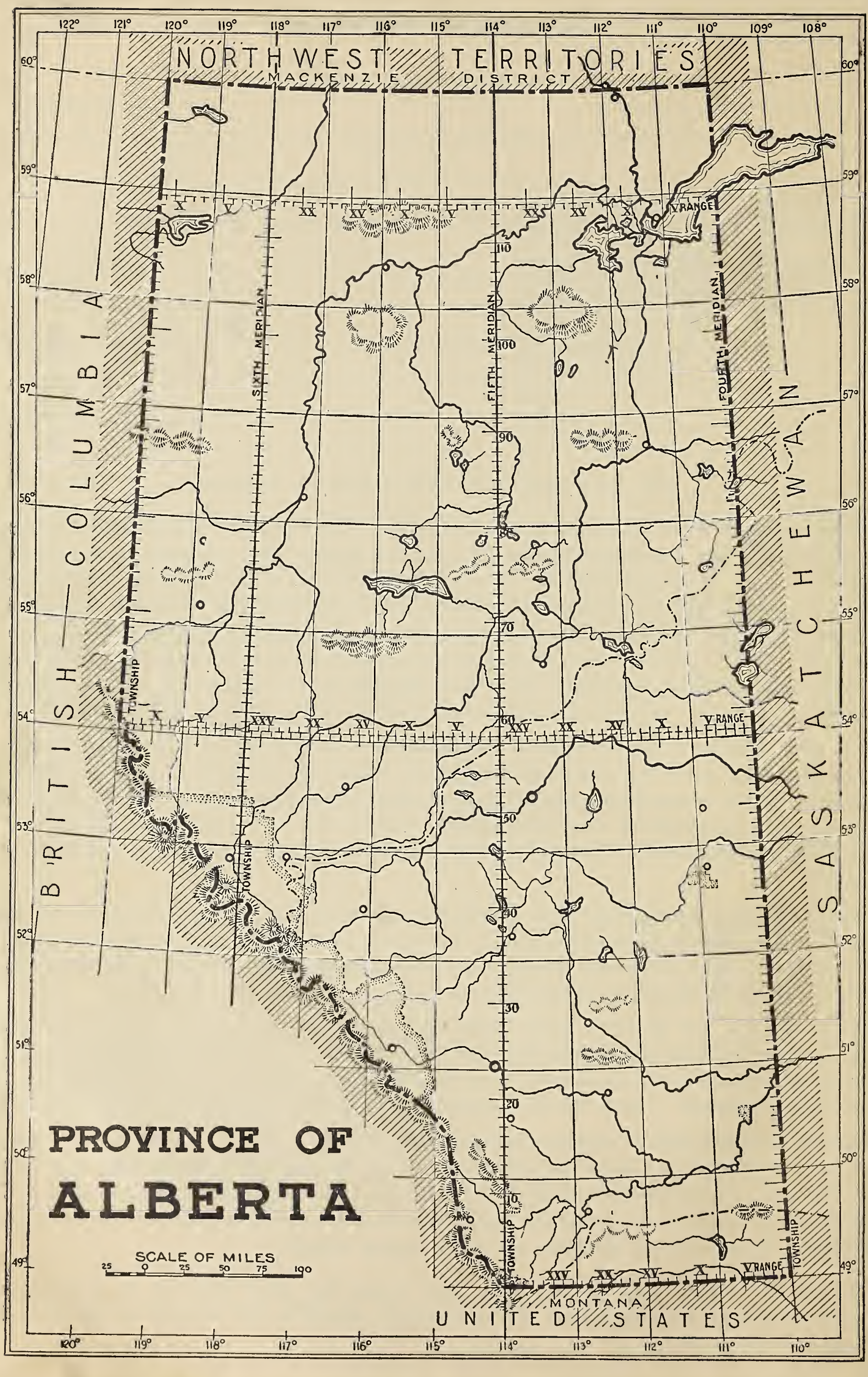
All over Alberta there are signs of the presence of petroleum, and in the past few years millions of dollars have been spent in the search. The only oil field now in operation is in the Turner Valley, about thirty-five miles south-west of Calgary, where there are five wells. There are good prospects of oil in the district close to the International Boundary and also in the *Wainwright* district. Drilling for oil is being carried on at present in most parts of the province.

Along the *Athabaska River* near *McMurray* are large beds of bituminous or tar sands. The area of the beds is estimated at about 750 square miles. The product is used for paving streets and for roofing purposes. As the Northern Alberta Railways now reach the beds, it is expected that much use will in a short time be made of these valuable deposits.

Clay suitable for pottery, sewer pipes, brick, and tiles is another important natural product. The presence of suitable clay and the unlimited supply of natural gas for baking purposes has resulted in the establishment at Medicine Hat and at Redcliff of valuable crockery, tile, and glass factories. There are four cement factories at present in operation in Alberta.

In the northern part of Alberta are many salt springs and also rich deposits of rock salt. Near McMurray there is a large bed containing at least fourteen feet of pure salt at a depth of about 700 feet. In the foothills of the Rockies is found building stone of a fine quality. Other minerals are gypsum, found along the Slave, Athabaska, and Peace Rivers, talc, potash, and phosphate. None of these, however, are being largely mined.

1. On the outline map on the next page locate the chief districts in Alberta where minerals other than coal are mined. Be particularly careful in the location of the natural gas fields and the oil fields.


PROVINCE OF
ALBERTA
SCALE OF MILES
25 0 25 50 75 100
NORTHWEST TERRITORIES
MACKENZIE DISTRICT
BRITISH COLUMBIA
SASKATCHEWAN
MONTANA
UNITED STATES
SIXTH MERIDIAN
FIFTH MERIDIAN
FOURTH MERIDIAN
TOWNSHIP
RANGE
122° 121° 120° 119° 118° 117° 116° 115° 114° 113° 112° 111° 110° 109° 108°
60° 59° 58° 57° 56° 55° 54° 53° 52° 51° 50° 49°
10 20 30 40 50 60 70 80 90 100 110
XXV XX XV X V

2. Of what use is natural gas to Edmonton, Calgary, Medicine Hat, and Lethbridge?

3. There does not seem to be any doubt that very soon Alberta will be a large oil-producing province. What would be the advantages to the province were such to be the case? Write down twelve things for which oil and its products are used.

4. Describe three disadvantages which the mine owners of Alberta have at present to face.

LUMBERING

Over one-third of Alberta is forest land, that is land which is not suited to agriculture but is capable of producing forests. Fires have done so much damage in the past, however, that a large part of this area has no timber suitable for saw-mill purposes. Saw-mill timber is usually considered to be trees that are ten inches in diameter at the height of a man's breast, and of this there is only 6,100 square miles in the province. There is, however, a further 50,000 square miles of land more or less covered with timber from six to ten inches in diameter that is suitable for props used in mines, railway ties, telephone poles, fence posts, pulpwood, and fuel. All the remaining forest area is covered with young trees, which, if not damaged, will develop into valuable forests. *See map on page 46.*

The principal forests are along the eastern slope of the Rocky Mountains, but this is not the only forest region. The entire northern half of the province has extensive forests and furnishes a large part of the timber required by the saw-mills. The forest areas at present in use are either at the headwaters of the various rivers or along their course, thus enabling the lumberman to float his logs with little trouble to the nearest saw-mill. In Northern Alberta the timber is mainly jack pine, white spruce, and poplar. South of the Athabaska River jack pine and spruce fill the forests, together with birch, tamarack, and willow. The larch is also found in the wetter parts.

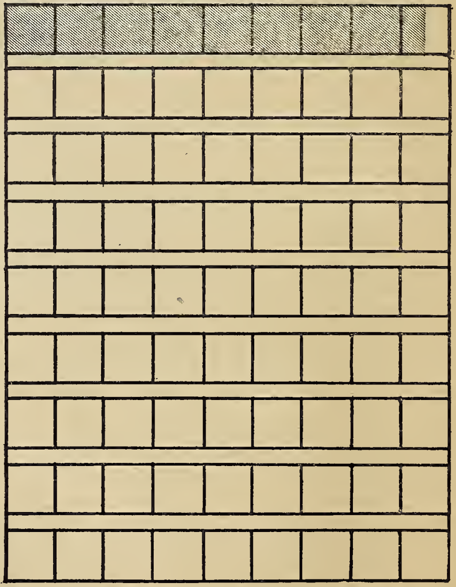
Of course, the lumbering industry in Alberta cannot compare with that in some of the larger and more heavily forested provinces. This will be evident from the following graph:

TIMBER PRODUCTION—1927

Complete the graph.

SCALE: 100,000,000 cubic feet ▨

PROVINCE	CUBIC FEET
Quebec	856,248,000
British Columbia	738,421,000
Ontario	699,020,000
New Brunswick	202,069,000
Nova Scotia	126,960,000
Manitoba	98,895,000
Alberta	86,875,000
Saskatchewan	55,546,000
Prince Edward Island	16,103,000



1. Where does Alberta stand as a lumbering province? 7

The most important trees growing in Alberta are jack pine, larch, spruce, balsam, white birch, and poplar.

2. Name four kinds of trees that are found in your neighborhood. For what are these suitable? [illegible]

In order to preserve the timber supply of the province, about 28,000 square miles of forest land have been set apart as *forest reserves* or *national forests.* About two-thirds of this area, which includes the *National Parks,* is on the east slope of the Rocky Mountains, but there are also other large areas, such as the Swan Hills and Martin Mountain reserves. In the reserves permission is granted to settlers to cut wood for fuel, and lumbermen are allowed to cut timber under very strict regulations.

Taking Care of our Forests

Canada has a great deal of land which is not fit for farming but upon which there is valuable timber. Of the great forests which once covered Canada only half remain. Fully one-half of our timber has been burned. The loss to the country has been in the neighborhood of one billion dollars.

There are three ways of making up for this great loss: replanting, logging wisely, and taking care of the forests that remain. Replanting is being carried on everywhere in Canada, but the most progress has been made in the Prairie Provinces. In Southern Alberta the air is dry, and the winds are strong, and therefore most kinds of trees grow slowly. On the great ranches and wheat farms land is too valuable to be used for woods. Still a good deal of tree planting is being done. The farmers plant trees about their houses and barns, and set out shelter belts beside gardens and driveways. The trees break the winds and help to keep the moisture in the soil.

A second way to save our wealth of timber is to see that the men in the lumber camps cut their logs wisely. The law requires them to leave a three-foot stumpage in the woods which they have cut down. This means that the seedling trees will be protected while they are small and provided with plant food from the decaying stumps.

The third and most important way of saving the woods is by preventing forest fires. Every good Canadian, man, woman, and child, may and should have a part in this great work. Forest fires are caused in various ways. Very often they begin from the sparks thrown out by passing railway engines. Passengers toss lighted matches or cigarette ends from the windows; campers fail to put out their cooking fires. Quite often lightning kindles a forest fire. The great majority of fires break out along railway lines or in the "slashes" which the loggers leave behind them.

The law now requires railway companies to have fire-rangers patrolling their lines from April 1 to November 1. The rangers patrol from seven in the morning till six in the evening making two round trips over their beats during each day. The railway fire-rangers use speeders where that is possible. When the grades are steep or the traffic is heavy, they walk.

The railway companies are also required to plough fire guards not less than sixteen feet in width along each side of the right-of-way. The outer edge of the fire guard must be not less than three hundred feet from the centre of the railway track. These fire guards must be ploughed again or disced from time to time so that all weeds are kept down. Most railway men take a great interest in seeing that the railway right-of-way is kept clear of all rubbish in which fires might break out. Many of the lines now use oil-burning engines, and this lessens greatly the number of fires, for, when oil is used as fuel, there are no sparks to fly from the smokestack.

Many forest fires break out in the "slashes" which the lumber camps leave behind them. Fires begun in these great stretches of cut-over woodlands are very difficult to put out. The slash made by the settler clearing his land is hardly less dangerous. In Canada most of the timberlands belong to the government, and strict rules are now laid down for the lumbermen. They are required to cut the timber without wasting it, and to burn the brush and branches lopped off the logs, leaving all tidy on the ground. If this is done, there is no rubbish in which the fire may begin.

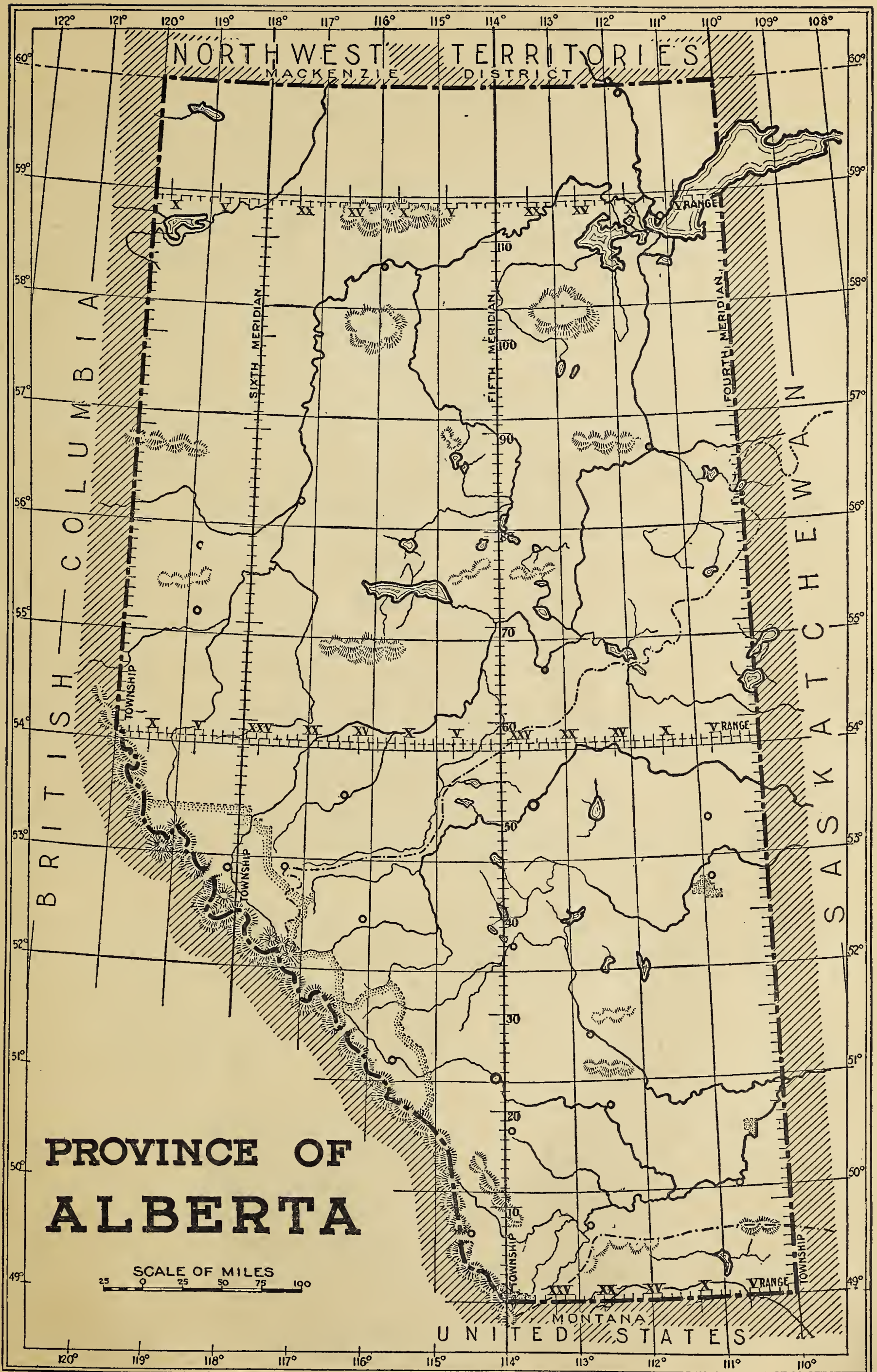
The government now spends a good deal of money in preventing fires. Fire patrols are stationed here and there in the woodlands. Each walks or rides back and forth, round and about his share of the forest, watching for fires. If he finds a small one, he puts it out. If he finds a large fire, he has power to call all the people in the neighborhood to help him. A number of the fire patrols now use aeroplanes. They fly back and forth over the woodlands during the hot, dry summer weather watching for the pillars of smoke that show where a fire has begun.

Every Alberta boy and girl should be a fire patrol. When camping, be very careful to put out the cooking fire. It is a good plan to go back to it after ten minutes and take a second look to make sure that it is out. If you strike a match out-of-doors, break it in two before you throw it away. If you do this you will be sure to feel it if it is still alight. Wherever you walk watch for fires. In this way you may save thousands of dollars to the country.

3. On the outline map on the opposite page locate the forest reserves, including the National Parks. You will find these reserves on the colored map in the centre of the book.

4. After you have read carefully the foregoing description, tell in your own words how the forests are guarded against fire.

5. Describe in your own words how the aeroplane is used in preventing and fighting fires in the Rocky Mountain timber reserves.



PROVINCE OF ALBERTA

6. Why is it important to prevent fires in the reserves, or indeed in any part of the forest area of the province?

7. What can *you* do to prevent forest fires?

An Alberta Lumber Camp

Alberta's timber is one of her most valuable possessions. As much of it stands in Northern Alberta, where railways are only beginning to be built, it is still largely uncut. We have fifty million acres of merchantable timber. This, if it can be saved from fire, will bring great wealth to the province.

Lumber companies are already working in several parts of Alberta. There is a lumber camp twelve miles from Antros Siding on the Canadian Pacific Railway running west from Lacombe. The drive in is a narrow road bordered with spruce trees from sixty to eighty feet high. At the camp there are bunk-houses, a large dining-room, a cook-house, blacksmith shop, barns, and a saw-mill. The buildings are of logs, and all are fitted with electric light. The bunk-houses have beds with springs and mattresses, but the men furnish their own blankets. As a rule the camp employs two cooks and two "bull" cooks who wash dishes and prepare vegetables. The best of food is provided.

The men are divided into three groups for logging. A marker goes through the woods and marks the trees which are large enough for cutting. The sawyers fell the trees and cut them into saw logs with cross-cut saws. The swampers trim the branches off, and the skidders, who skid out the logs, use great tongs with a ring in the end. The tongs are fastened around a log, and a horse is hitched to the ring. The harder the horse pulls the more firmly the tongs grip the log. The skidders drag the logs to the skidway, an inclined platform by the roadside. Here the logs are piled, the large ones at the bottom so that the small ones shall not roll.

In summer the logs are floated down the nearest stream. In winter they are hauled in sleighs to the mill. Sometimes they are loaded and unloaded with a "jammer." The jammer is a kind of tripod standing high in the air. By it the logs are hooked and swung into their places on the pile. The road is prepared for the sleighs by being rutted out. Two ruts are made in the snow the right distance apart, and water is poured into these ruts and allowed to freeze. A four-horse team can easily pull a three-ton load along such a road. On the hills a boy called a "sand monkey" is kept busy scattering sand along the ruts before each load comes down. This prevents the sleigh from running over the horses.

The mill is a great shed-like building where the scream of the saws makes conversation almost impossible. The logs are rolled in along a moving table above which sits the head sawyer. It is thrilling to watch him. He knows at a glance just how many boards he can get out of each log. He pulls a lever beside him, and the great log is slabbed, that is, pushed close enough so that the revolving saw slices off the bark. Thump! Thump! Thump! The slabs are off each of the four sides. The sawyer pulls other levers, and the two-inch, one-inch, and one-half-inch boards fall and are carried forward to the "tail-sawyer", who sorts them and passes them on to a man who piles them ready to be shipped, or to be planed, or to be taken to the drying ovens.

8. Give in your own words a description of lumbering in Alberta. Note particularly the camp, the method of cutting the timber and transporting it to the saw-mill, and the handling of it at the mill.

FISHING

As Alberta is an inland province, its fisheries cannot in any way compare with those of Nova Scotia, New Brunswick, and British Columbia, which lie along the ocean. In fact, in 1928 the total value of the Alberta fisheries was only about three-quarters of a million dollars, and fewer than 700 men were employed. But the 2,360 square miles of fresh water area included in Alberta contains an abundance of fish, and the industry is certain to grow.

One of the chief difficulties in connection with the fisheries in Alberta is the distance from market. Many of the lakes are far distant from railways, so that it is very difficult to carry the fish in such a way that they will be fresh when they reach the market. But, as railways are built into these far northern parts, this difficulty will disappear. At present there is quite a demand for lake fish in the cities and towns of the province, and some are sent out of the province.

It should not be forgotten that the fish in the northern lakes and rivers not only provide food for the settlers along their banks and for the Indians, but they are also valuable as food for dogs during winter travel. Frozen fish are carried as part of the food supply of the dog-trains.

In order that the supply of fish may not fail, the Dominion government is taking care to stock the lakes with fish from the government hatcheries.

The following table shows the principal fish, the number of each caught, and the value (1928):

	Pounds	Value
Whitefish	2,702,000	$340,407
Trout	1,937,100	222,312
Pickerel	849,900	92,427
Pike	665,700	32,056
Tullibee	418,400	21,335
Mullets	51,400	1,001
Perch	81,700	10,669

1. Arrange the fish in the foregoing table in the order of the number of pounds of the fish caught.

2. Arrange the fish according to the value of the total number of pounds of the fish caught.

3. Arrange the fish according to the value of each fish.

The principal lakes in which commercial fish are caught are:—Lesser Slave, Peter Pond, Athabaska, La Biche, Pigeon, and Cold.

4. Locate these lakes on one of the outline maps.

FISHING AT FAUST, LESSER SLAVE LAKE

Most of Alberta's fish come from Lesser Slave Lake. In the old days, the fishermen worked only in the winter, and the fish had to be hauled by teams to Athabaska. Now the railway line from Edmonton to Peace River runs along the south shore of the lake, and fishing is carried on all the year round. About seventy-five carloads of fish are shipped every winter. Fewer cars are exported in summer, but the price is better, partly because the fish are of better quality when they are not frozen, and partly because it costs more to handle them in summer.

As a rule the men fish in twos, one managing the boat and the other attending to the nets. The boats are from twenty-four to thirty feet long, painted blue-gray and trimmed with black or dark green. The decks are not painted, as paint makes them slippery and hard to stand on. Even if they are painted when new, the strong lye water used for cleaning the boats and nets soon eats the paint off. The boats are built with high sides to enable them to carry their loads of two or three tons safely.

Each boat carries fifty nets. These nets are expensive. They are made of the finest linen thread. The linen nets cost $3.50 a pound, and it takes two or three pounds to make a net of standard length. At that they do not last very long. Storms are common on Lesser Slave Lake. The men are often unable to go out for two or three days. The nets are blown away, and are lost or torn. The Jack fish, too, often tear the nets. These fish are strong and fight fiercely when caught in the meshes of the net, tearing it so that it is past mending. Many nets are useless after four or five months' wear. It is easy to see how care in handling the nets may make the difference between success and failure in a season's fishing.

The men go out in the evening to set the nets. In setting a gang of nets the engine is put in low gear and so regulated as to make the boat go as slowly as possible. First the buoy is thrown over; this bears the fisherman's licence number. The line is paid out till the anchor is thrown out. Then more line is paid out till it comes to the end with the net tied to it. The net is allowed to slip through the hands of one of the men while the other separates the top and bottom lines and clears it in such a way that it hangs in the water like a fence, the corks which are fastened along one side making that side float, while the leads fastened along the other edge make that side sink. As the net is a little heavier than water, the leaded side sinks to the bottom, and the top of the net does not show above the surface unless the water is very shallow.

Between four and five o'clock in the morning the men go out to take the fish. As the engine is started the stern sinks, the bow rises, and the smart little boat dashes away on its half-hour's run to the nets. The men eat their breakfast and make all ready to receive the catch. When the buoy is reached, the engine is shut off, and, by one man grasping the buoy, the boat is brought to a standstill. The line leading to the net anchor is hauled in and coiled neatly. Next, the shorter line, beyond the anchor, to which the net is fastened is drawn in. As the net comes home, the fisherman takes the fish out of the meshes and drops the net into a box placed ready for it. When the net is all in, the second anchor and buoy are taken aboard, and the men go on to the next net. It seems strange that the fish should be caught in a net like a fence. The twine is very fine, and, when wet, it clings. When the fish run against it, they never back up but, instead, turn round and round till they are hopelessly entangled.

If the fishing is good, the men set their nets again in the same place. When they have visited all their nets, they clean their fish and take them to the warehouse of one of the large fishing companies. Here they are weighed and graded, and the fisherman is given a slip which he takes to the office and exchanges for a cheque. At the warehouse men are busy chopping ice and packing the fish. The fish are placed in boxes which hold a hundred pounds of fish and a hundred pounds of ice. The quantity of ice used is one reason why it costs so much more to fish in summer than in winter. Hundreds of tons are put up every winter. The large companies not only have ice-houses on shore, but they keep coolers scattered about the lake to which the men take the fish which they catch at long distances from the warehouse. The company's launch gathers the fish from the coolers and carries them to the main fishing station, where it is re-packed. As the price of fish varies a good deal, most of the companies have cold-storage plants where the fish can be kept fresh till the market price makes it profitable to sell. It is then shipped in refrigerator cars. Much of it goes to Chicago and to Eastern Canada.

A TRUE-FALSE GAME

Each one of these statements is false. Change a word in each sentence and make the statements true.

1. Most of our fish comes from Great Slave Lake.
2. We ship more cars of fish in summer than in winter.
3. The nets are made of cotton thread.
4. The nets hang in the water like tables.
5. The fish often back out of the net.
6. The ice used makes fishing cheap.
7. The fish companies fill the ice-houses in summer.
8. They keep coolers on the shore.
9. The fish are packed in sawdust.
10. They are shipped to Vancouver.

TRAPPING

In the early days of what is now the province of Alberta hunting and trapping were the chief occupations of the people, as indeed they were over the whole of what is now Canada. Of course, neither hunting nor trapping is now so important as it once was, in comparison with other industries, but the value of the raw furs gathered in Alberta is considerable. Moreover, trapping provides a living for a large number of people, particularly in the northern part of the province. Alberta now stands third in the list of fur-producing provinces of Canada, being surpassed only by Ontario and Quebec. The value of the raw furs marketed in Alberta in the season 1926-27 was a little more than $2,000,000.

There are a considerable number of fox ranches in the province, where these animals are raised for their fur. Their number, however, is not increasing rapidly.

The following table will interest you, as it shows the principal fur-bearing animals, the number trapped, and the value of the pelts:—

	Number	Value	
Badger	10,582	$ 84,656	$8.
Beaver	9,153	228,825	$25.
Coyote	42,015	504,180	$12
Ermine (weasel)	94,103	164,680	$1.75
Fox	9,523	367,628	$38.
Muskrat	306,499	582,348	$1.90

Other animals caught during the same season—1926-27—were bear, fisher, lynx, marten, and mink. These, however, were not trapped in such great numbers.

1. Arrange the animals in the foregoing table in the order of the number of each caught.

enthusiastic

industrious

2. Arrange the animals according to the value of the total number of each caught.

muskrat, Coyote, Fox, Beaver,
Weasel, Badger.

3. Arrange the animals according to the value of the individual pelts.

Fox, Beaver, Coyote, Badger
muskrat Weasel.

4. How does the province of Alberta protect the wild animals, other than those in the National Park and Animal Reserves?

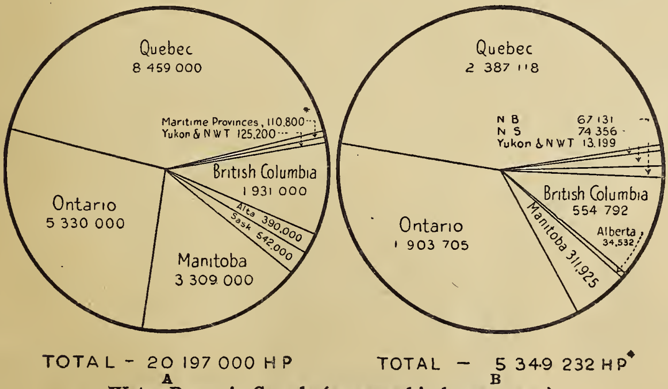
Season License

5. What city in Alberta is the centre of the fur trade? Account for this. [illegible]

close to fur district.

WATER-POWER

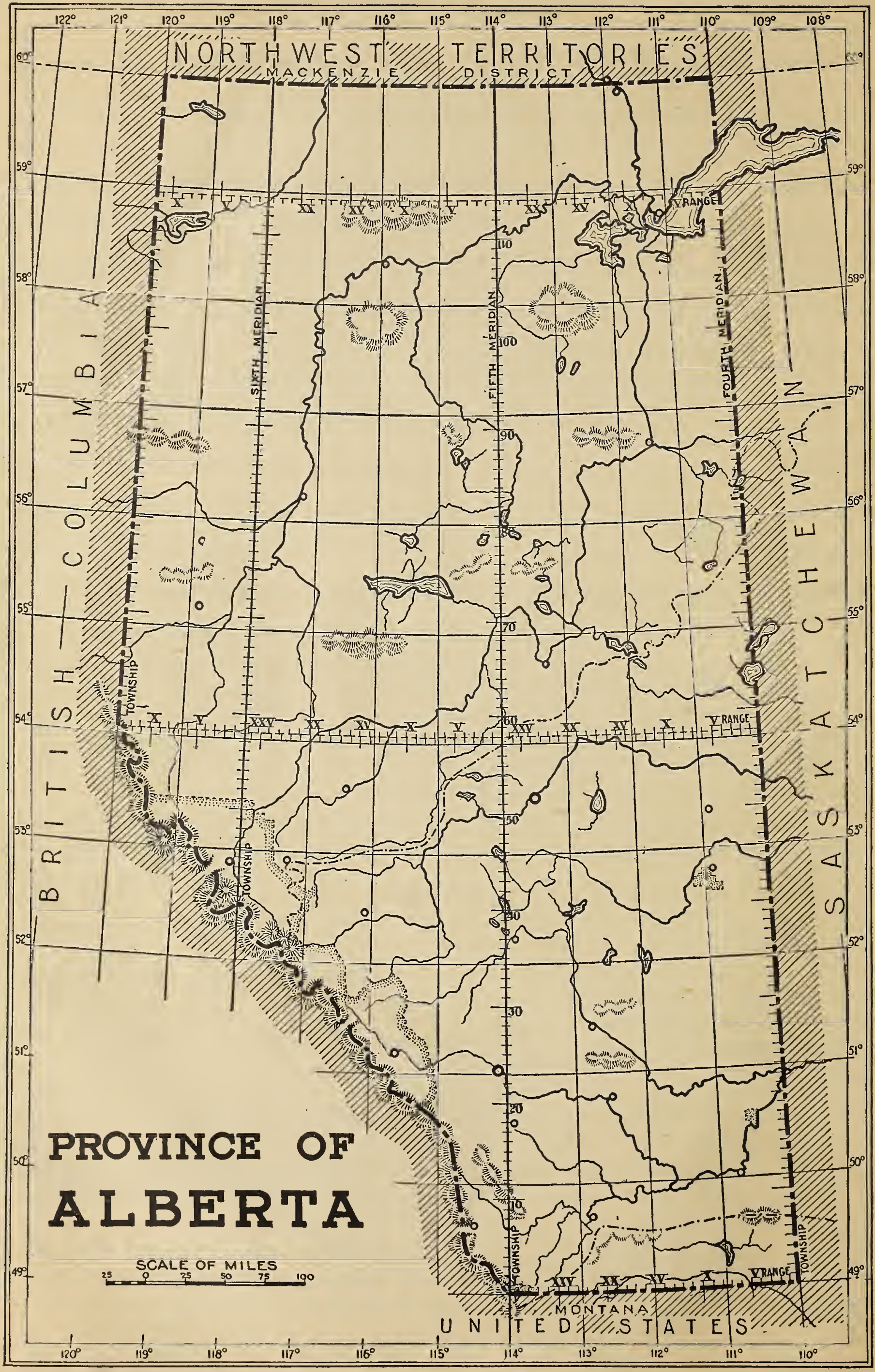
In your study of the rivers of Alberta you noticed that the waters of many of them are used to produce electric power. This electricity is carried by means of wires to the cities and towns, where it provides light, and to the factories where it provides power for the running of their machinery. There is considerable water-power in Alberta, and this is rapidly being developed. You will see from the colored map in the centre of the book the important points at which water-power is used. At present the city of Calgary is provided with electricity from the falls at *Seebe* on the Bow River, and plans are now being made for the use of the water-power at *Spray Lake* in Rocky Mountains Park.



Water-Power in Canada (expressed in horse-power)

A. Water-power which may some day be used. *New Brunswick, 87,000; Nova Scotia, 20,800; Prince Edward Island, 2,439.

B. Water-power which is now being used. *Includes Saskatchewan, 35, and Prince Edward Island, 2,439.



PROVINCE OF ALBERTA

1. On the outline map on the opposite page mark the points at which electricity is now being developed by means of water-power. Mark the points where power may at some future time be developed. Mark also the places nearest these water-powers.

2. Consult the diagram on page 75 and make a comparison between Alberta and Manitoba as to water-power.

3. What is the value of water-power to Alberta? Note particularly its benefit to the manufacturers.

MANUFACTURING

Alberta, since it became a province in 1905, has greatly increased its manufacturing, but as yet it cannot compare with most of the other provinces. The manufacturing of Ontario represents almost one-half of the total product in Canada, while Quebec represents almost two-fifths. Alberta, however, has only just begun. With her coal supply and water-power, together with the abundant other natural resources, Alberta should rapidly increase her output of manufactured products. At present the greater part of our manufactures is used within the province, but there is a large trade without the province in butter, cheese, flour, and meats. It is interesting to note that in 1923 one company in Edmonton shipped over two and one-half million pounds of butter to British Columbia, and, in addition, one million pounds across the Pacific. The following table shows the principal products of the mills and factories, and the value of each in 1927:

Vegetable Products	$30,711,039
Animal Products	22,133,400
Textiles and Textile Products	3,084,612
Wood and Paper Products	9,509,202
Iron and its Products	3,940,681
Non-Ferrous Metal Products	459,355
Non-Metallic Mineral Products	10,456,295
Chemicals and Chemical Products	455,695
Miscellaneous Industries	255,534
Central Electric Stations	3,981,504

Other industries, not included in the foregoing table, bring the value of the manufactured products of Alberta up to a grand total of $84,987,317.

1. Compare the value of the manufactured articles of Alberta with that of the latest wheat crop of which you have the value.

wheat $1\frac{1}{3}$ x manu.

2. Compare the value of the manufactured articles of Alberta with that of the animals owned on the farm in the last year of which you have information. 26,482,000 $1\frac{1}{4}$

3. Find out all you can about the use made of the natural resources of the province in the manufactures. Tell about it in a connected paragraph.

Coal - used for power Salt - salt.
wheat - flour. Petroleum - gas, oil.
Forests - lumber paper,
Lakes & Rivers - electricity - fish
[illegible] - [illegible]

4. Describe at least four ways by means of which Alberta might increase its manufactures.

[illegible] should [illegible] RR [illegible] ship [illegible] to diff. [illegible]
Open a woollen factory in Alberta.
[illegible] factory.
[illegible] milk factory.

5. Make a list of the manufacturing plants in the place in or near which you live, or in any city or town that you have visited.

[illegible] milk, bakery,
Calgary -

TRANSPORTATION

If you will examine the colored map in the centre of this book, you will see that Alberta is well supplied with railways, except in the northern part of the province. Most of the lines belong to the *Canadian National Railway* system or to the *Canadian Pacific Railway.* In addition to the lines of these two companies, there are two lines which have been, till recently, under the control of the provincial government—the *Edmonton, Dunvegan, and British Columbia*

Railway, and the *Alberta and Great Waterways Railway.* These two lines have been maintained chiefly for the convenience of settlers who have made their homes far from the settled districts. They have been taken over by the Canadian National and the Canadian Pacific Railways, and it is expected that further settlement of the north will go forward rapidly. These railways are now known as the *Northern Alberta Railway System.*

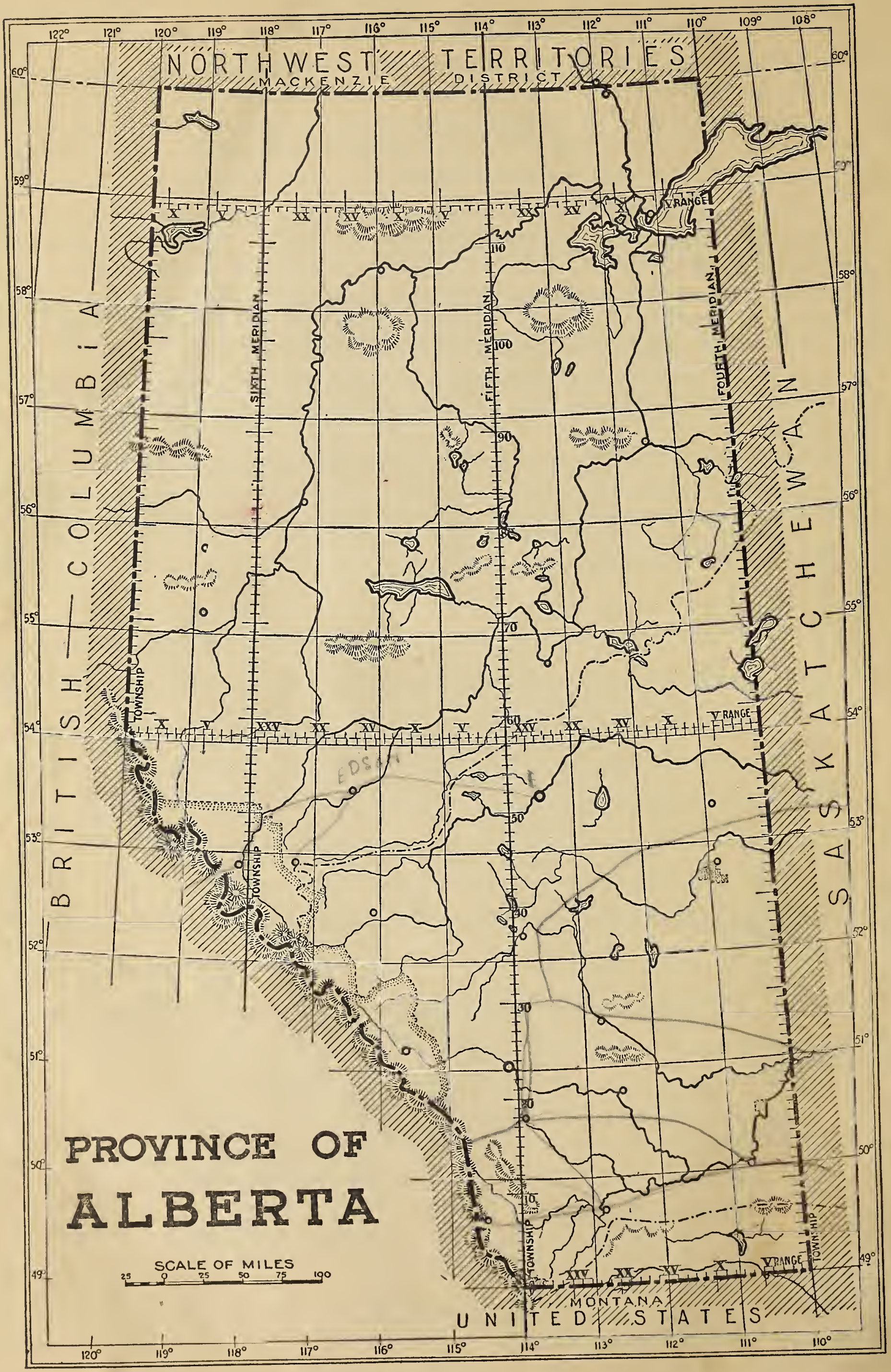
1. On the outline map on the next page trace the railways of Alberta, marking the Canadian National lines in red, the Canadian Pacific lines in blue, and the Northern Alberta railways in green or yellow.

2. On each railway line mark the important places, particularly the junction points where the railway lines cross or separate. You can obtain railway time-tables containing large maps from the nearest Canadian National or Canadian Pacific Railway agent.

3. Mark on the map the locations of the large coal fields that are now being worked in Alberta, so that you may have in your mind clearly the relations of these fields to railway transportation.

4. Imagine that you are making a trip from Lethbridge to Edmonton by way of Calgary. What line or lines of railway would you travel over? What cities and towns would you pass through? What is the character of the country? What interesting things did you see? Give this information in a single paragraph.

5. Describe in a similar way any railway trip that you have made in the province, other than those in 4, 6, and 7.



PROVINCE OF ALBERTA

6. Find out all you can about navigation on the Peace River. Tell what you can about it in the space below. *See page 27.* Mention particularly the advantages to the province of this waterway.

7. You are on your way from Edmonton to the mouth of the Mackenzie River. You find yourself at Waterways at the end of one of the main lines of the Northern Alberta Railways. Describe the route you would follow by water in passing out of the province on your way north. What is the value to the province of this waterway?

A Diary of a Trip to Fort Smith

July 5th.

We left Edmonton at 9:30 in the morning on the Northern Alberta Railway train for Waterways. It was raining but not very heavily. Some of the boys were nearly left behind because they ran down to the front of the train to see two carloads of buffalo. The buffalo were being taken from Wainwright to Wood Buffalo Park. There was only one passenger coach on the train. It was a sleeper. At meal-times the waiters set up small tables and served us. We passed farms and then ran through spruce woods.

July 6th.

Waterways is 300 miles north of Edmonton. We arrived this afternoon and at once went on board the steamer which is to take us down the river. This town stands at the place where the Clearwater flows into the Athabaska. We saw a fish barge being launched to bring whitefish from Lake Athabaska. The fish people have a cold-storage plant at the lake and another here. They do a large trade through Edmonton to Chicago and other eastern cities.

July 8th.

We left Waterways at 10 o'clock yesterday morning and came into McMurray, pushing a barge in front of us. At McMurray we saw small streams of tar oozing out of the steep bank of the river; we got tar on our boots as we walked by the shore. It is expected that in time the tar sands will be used for paving roads. They have not yet found out just what is the best way of mixing them.

Fort Chipewyan stands on the shore of Lake Athabaska not far from the place where the Athabaska River flows into the lake. There are high red rocks at the mouth of the river. We did not stay long at Fort Chipewyan as the wind favored our crossing the lake to the mouth of the Slave River. The sailors will not take these flat-bottomed river boats across the lake in an east wind. It was daylight till 10.30 p.m.

July 9th.

We passed the mouth of the Peace and came down the Slave in the moonlight. The Peace flows into the Slave, but when the water is high in the Slave it sometimes backs up into the Peace. This morning we wakened at Fitzgerald. This place was named for Inspector Fitzgerald of the Lost Patrol. We left the boat and crossed the sixteen-mile portage to Fort Smith.

July 12th.

We have been three days at Fort Smith waiting for the boat which is to take us down the Mackenzie. We are staying at Conibear's Hotel. Fort Smith is just north of the boundary of Alberta. It is the capital of the Northwest Territories. There are many Indians about. We walked over to see the Mountain Rapids on the Slave River. They are twenty miles long and very wild looking. Most of the time we have watched the men freighting goods back and forth across the portage to Fitzgerald. The portage has to be made to avoid the Mountain Rapids. Everything for the north country has to be brought over the portage—boats, houses, food, everything. The men work night and day in summer. The sun did not set till nearly midnight, and it rose again about two o'clock.

July 13th.

On this day we began our return trip to Edmonton.

CITIES AND TOWNS

On page 44 you were asked to locate on one of the outline maps the cities of Calgary, Edmonton, Lethbridge, and Medicine Hat, and 22 other important centres. Glance over the outline map on which you have located these places and refresh your mind as to their location.

1. From the cities and towns, other than Calgary, Edmonton, Lethbridge, and Medicine Hat, choose six. Show the reason for the location of each place, and the advantages of its situation.

(1) ____________________

(2) ____________________

(3) ____________________

(4) ____________________

(5) ____________________

(6) ____________________

2. Name ten important places that are located on rivers.____________________

3. Name ten important places that are located on railway lines, but have no important river near at hand.

4. Name ten important places that are junction points, or crossing points on railways.

5. Name ten important places that are located near large coal mines.

6. Describe the town or village nearest your home, or a town or village which you visit regularly.

How?

7. Describe the city nearest your home, noting particularly the following: — (1) situation, (2) advantages of situation, (3) surrounding country, (4) railway connection, (5) fuel, light, and power supply, (6) chief industries, (7) principal public buildings and works, (8) points of interest, (9) why it is important.

NATIONAL PARKS AND RESERVES

In the mountain section of Alberta several large areas have been set aside by the Dominion government for the benefit of the public. These areas are known as *National Parks.* The parks are left as far as possible in their natural state, so as to preserve their natural beauty. Timber is not allowed to be cut, nor are the animals and birds allowed to be hunted or shot. The National Parks in Alberta are *Rocky Mountains Park*, *Jasper Park*, and *Waterton Lakes Park.*

Rocky Mountains Park

We had our Sunday School picnic at Banff last summer. We drove up in five cars. We left Calgary at six o'clock in the morning and did not get home again till after ten in the evening. It was a wonderful day for all of us. We have a fine view of the Rocky Mountains from the windows of our school, but very few of us had ever been among them.

Leaving Calgary, the road turns west at the top of the hill. A great valley drops away on the left hand. It sweeps westward mile after mile and makes the great wall of the mountains which rises on the far side of it, seem all the more magnificent. At Cochrane the road winds down a steep hill five miles long. It then follows the lovely Bow River up the valley.

We passed many ranches and presently left the prairie behind, climbing among the foothills. As we drew near the park gates, the mountains closed about us. The Three Sisters stood south of the road, and ahead rose Rundle and Cascade. Near the village of Canmore we passed the Hoodoos, strange figures of sand. They have been carved by the rain, and they look very much like people. The road enters the Park at Kananaskis, but the Gap, eight miles farther on, is more like a door. Here the road runs between two high walls of rock, which seem to stand on guard. At the gate, we paid a fee and were given a small tin buffalo to fasten on our engine.

We drove on through the trees and then climbed a long and steep hill to the town. By the time we reached the hotel we were ready for a second breakfast. There are several good hotels in Banff. The Banff Springs Hotel is the finest. It belongs to the Canadian Pacific Railway and is very large. It stands on a height looking up and down the valley. It has a glorious swimming pool and a splendid golf links.

There are so many interesting places to visit and so many exciting things to do at Banff that we could not hope to do them all in one day. After breakfast our party divided, and each group went to see or do the thing it most wished.

One party drove to Lake Minnewonka, another to Lake Louise. A third group rented a boat and went fishing in the Bow. A fourth party set out to climb Sulphur Mountain, which stands near the town and has a good road all the way to the top of it. The day was hot, and everyone returned to the hotel quite tired.

After a late lunch we all went up to the Cave and Basin to swim in the hot sulphur water. It was delightful. The water is as warm and buoyant as though it had been heated. The cave lies just behind the swimming pool. You go through a long winding passage up steps and then up more steps. At last you come to a round cave with a pool of hot sulphur water in the middle of it. The light enters from a hole in the roof. At one time there were a number of stalactites hanging from the roof of the cave, but thoughtless people have broken them off.

When we had all been swimming till we were tired, we dressed and went to see the animals in the zoo. There were many kinds of birds and some very interesting animals. The elk and deer and mountain goat and bear are free in the park. No one is allowed to carry a gun inside the gates. The animals know this, and they are quite tame. The bears come up to the garbage dumps of the hotels and hunt over them for jam tins and the other sweet stuff which they love.

After supper we went to buy picture post-cards. It was hard to choose which to take, for there are many beautiful views of the park. Then we walked down to the end of the principal street and watched the sun set behind the great peaks in the west. The twilight falls quickly in the valley, and with it, even in summer, comes a chill. We were glad to put on our coats before seating ourselves in the cars and setting out for home.

A TRUE-FALSE GAME

Some of these statements are true, others are false. Write after each sentence the word which correctly describes the statement: *true* or *false*.

1. Rocky Mountains Park is a national park. ______________________________
2. It belongs to Alberta. ______________________________
3. Banff is the chief town in the park. ______________________________

4. Banff is 50 miles from Calgary. ____________________
5. The park is south of Calgary. ____________________
6. The road follows the valley of the Old Man River. ____________________
7. It enters the mountains at the Gap. ____________________
8. Lake Louise is very beautiful. ____________________
9. The water of the Cave and Basin is heated. ____________________
10. It has a great deal of sulphur in it. ____________________
11. There are many stalactites in the Cave. False.
12. The animals in the park are afraid of guns. "

JASPER PARK

Julia's father is a conductor on the Canadian National Railways. He promised Julia that he would take her to Jasper Park if she was recommended for Grade IX. After a good deal of coaxing, Father and Mother promised to let my sister Ann and me go with Julia on the same condition. How we did work for the Easter examinations! There was great rejoicing when we learned that we had all been recommended.

We reached Edmonton on Friday afternoon and that night took the Canadian National train for Jasper. Jasper Park is the largest and one of the most beautiful parks in America. A motor road is being built to it from Edmonton. In the meantime the many visitors reach it by train. Five hours after leaving Edmonton the Rocky Mountains appeared in the western sky. They looked like a blue cloud at first, but the great peaks soon began to stand out. The railway follows the Athabaska River into the mountains. After entering the park, the track runs along the east side of Brule Lake. A little farther on we passed Jasper Lake. Then, rounding Pyramid Mountain, we drew into Jasper station.

The town is small. There are only about one thousand people living there, most of them being employed on the railway or in taking care of the park. We motored three miles over a paved road to Jasper Park Lodge, where we were to stay. The Lodge stands on the shore of Lake Beauvert, one of the prettiest lakes in the park. We were taken to a little log cabin with three beds in it. This was to be our own during our stay. We slept there, but we ate and read and played games in the large central building. The grounds about are beautiful with trees and flowers. There are a swimming pool, a tennis court, and a famous golf links for the use of the guests.

As soon as we had unpacked our bags and washed up, we hurried out to look about us. To the west we looked up at "The Whistlers", twin peaks which guard the pass. It is an easy climb up these mountains, and from the top, which is flat, there is a splendid view of the whole valley. A great number of marmots have their homes on the top of "The Whistlers", which have taken their name from the curious whistling noise which the marmots make.

Towering into the southern sky stands Mount Edith Cavell, a mountain so beautiful that it is often called the "Queen of the Rockies". Eastward stands Old Man Mountain with his face turned towards the sky. Old Man is a favorite climb, though most climbers get only as far as his forehead, few being able to mount to the top of his nose.

In the afternoon we set out to motor to Mount Edith Cavell to see the Angel Glacier. It is a twenty-five mile drive, during which we had many beautiful views of the mountains, the valley, and the river. Mount Edith Cavell looked more and more splendid as we drew nearer to it. The glacier was beautiful. There was a great hanging glacier in the middle, with smaller ones spread out like great wings on each side.

The next day we drove to Maligne Canyon. After leaving the Lodge, we drove around three small lakes, and then, turning east, we climbed up to the canyon. It is about a mile long and 180 feet deep. Yet it is so narrow at the top that several men in the party thought they could jump across it. No one tried, however. The river drops into the canyon over a twenty-five-foot fall and makes a tremendous dashing and roaring as it foams along its narrow bed. Beyond the canyon, the road runs along the northern side of Maligne River to Medicine Lake. The waters of this lake are carried off by an underground river. We had not time to go farther, but the road runs on to Maligne Lake, which is twenty miles long and said to be surrounded by the most magnificent scenery.

The next day we drove to Athabaska Falls. This drive follows the old trail of the Indians and fur traders as they passed from Jasper to Banff and back again. It runs along the east bank of the river past several lakes. The falls are at the foot of Mount Kereslin. The river comes quietly around a curve and flings itself over an eighty-foot fall. It is a magnificent sight.

There are many other interesting drives and walks and rides in Jasper Park, but, as we had to be back in school on Monday, these were all we had time to take.

THINGS TO DO

1. Name four mountains which stand in Jasper Park. ____________________

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2. Name five lakes which lie in the park. ____________________

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3. Name two rivers. ____________________

4. Name two falls. ____________________

5. Tell what a glacier is. ____________________

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6. Tell what a canyon is. ____________________

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7. Tell what has made the canyon. ____________________

8. Tell how the fur traders used to get from Jasper to Banff. ____________________

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WATERTON LAKES PARK

Waterton Lakes Park was formed in 1914 partly because of Canada's friendship with the United States. Glacier, one of the American National Parks, lies just across the International Boundary. The largest of the Waterton Lakes lies partly in Canada and partly in the United States. Naturally the American government did not want Glacier Park spoiled by an untidy neighbor, so the Canadian government formed a National Park about the lakes on our side of the line.

Waterton Lakes Park lies in the south-west corner of Alberta, with British Columbia on the west and the United States on the south. The lakes lie thirty miles west of Cardston. No railway has been built to them. People motor in either from Cardston or from Pincher Creek, which is thirty-five miles distant. Both roads into the park are good.

Driving from the prairies, we find ourselves suddenly among the mountains, which rise straight up from the plains. We round a shoulder, and the largest of the three lakes is before us. The view is a beautiful one. We look down the length of the lake, which fills the valley. The mountains rise directly from the water's edge on every side. High mountains they are, with patches of snow on their backs, yet friendly looking. They rise in long, graceful slopes which invite us to climb. The waters of the lake are clear, very cold, and of a beautiful green-blue color.

The road winds among the trees around a little bay to the town, which is built on a peninsula. There is a fine school for the children whose parents live in Waterton all the year round. There are stores, too, a chalet, and a good many cottages for summer visitors. Over all towers the Prince of Wales Hotel, a very handsome place with one hundred rooms in it.

Waterton Lakes Park is a delightful place to rest. As it is not on the railway, it is very quiet. There are new walks and climbs to be taken each day. We play golf or picnic at Cameron Falls or fish for Dolly Varden trout in Pass Creek. To the north-west of the large lake there are two small ones connected by a narrow channel called the Dardanelles. The lakes are drained by the Waterton River, which flows into the Lethbridge River. In the upper lakes we may catch great lake trout; trout weighing more than fifty pounds have been taken. There are few places in the mountains where a pleasanter holiday may be spent.

PROBLEMS

1. How would you go from Edmonton to Waterton Lakes Park?________________

2. How far is it?________________.

3. How long would it take travelling by train?________________

4. How long would it take travelling by car at twenty miles an hour?________________

5. How would you go from Vancouver to Waterton Lakes Park by train?________________

6. How would you go from Vancouver to Waterton Lakes Park by car?________________

7. What direction is the park from Cardston?________________

8. What direction is it from Glacier National Park?________________

THINGS TO DO

1. On the outline map on the opposite page locate accurately each of the National Parks.

In order to preserve the game supply of the province, the government has set aside many areas in which both animals and birds are protected. The Animal Parks and Reserves are:

(1) Buffalo Park, near Wainwright	159	square	miles.
(2) Elk Island Park, near Lamont	51	"	"
(3) Nemiskam Antelope Reserve, near Foremost	9	"	"
(4) Wawaskey Antelope Reserve, north of Medicine Hat	54	"	"
(5) Wood Buffalo Park, near Fort Smith	10,500	"	"

The "Bird Sanctuaries," as they are called, are located at

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(1) Many Islands Lake	21	square	miles.
(2) Buffalo Lake	25	"	"
(3) Ministik Lake	51	"	"
(4) Miquelon Lake	11	"	"
(5) Lac la Biche	92	"	"
(6) Pakowki Lake	45	"	"
(7) Birch Lake	15	"	"

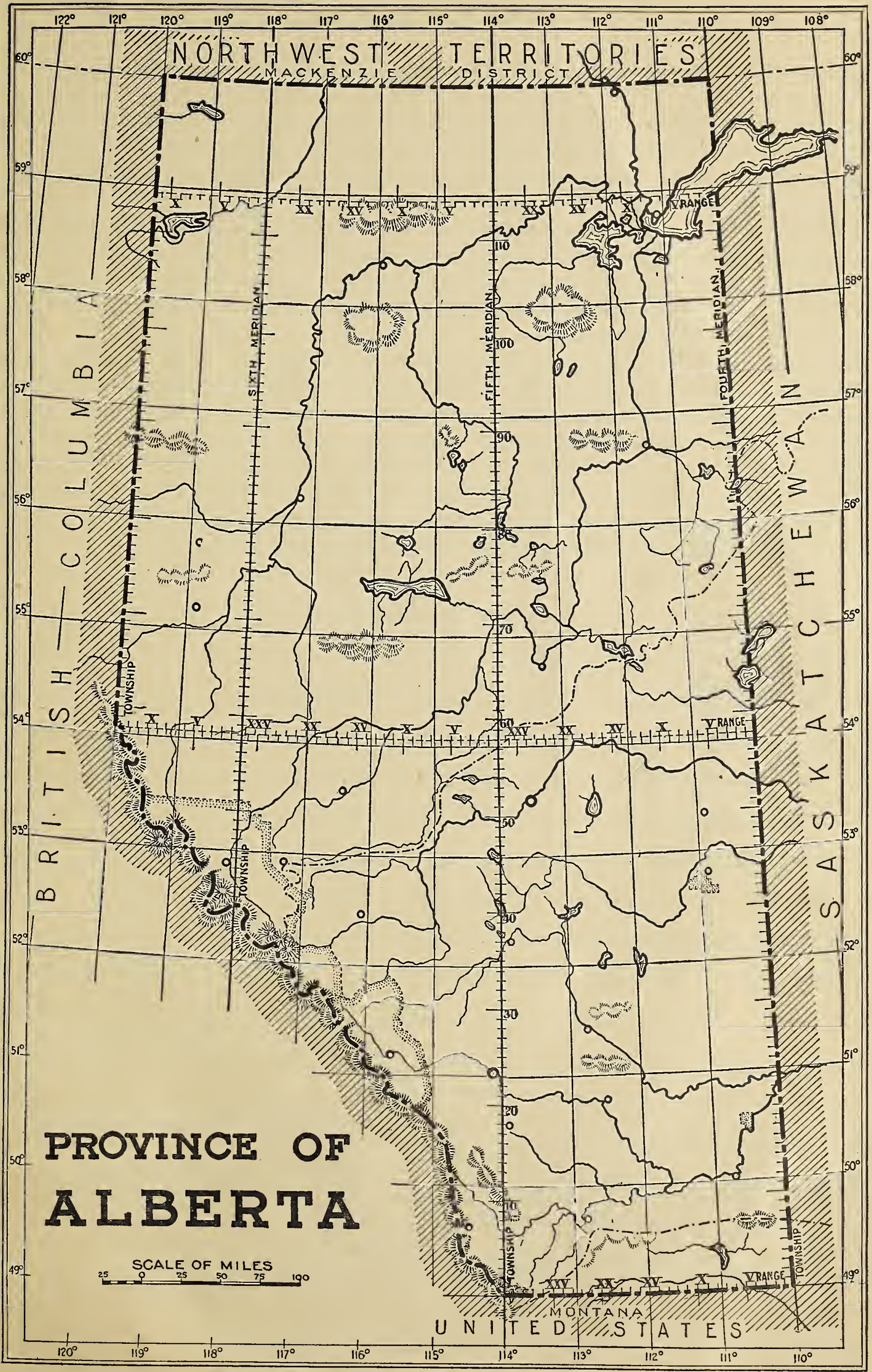
2. On the same outline map locate each of these Animal Parks and Bird Sanctuaries.

ALBERTA—THE SPORTSMAN'S PARADISE

Alberta is one of the very best places in the world for the preservation of game. The Rocky Mountains form a great natural refuge for birds and animals. Our climate is favorable, too: long hours of sunshine, sufficient rain to produce food in most parts, long autumns, and winters not too cold. As nature has given us so many advantages, it behoves us to do our part and to take wise care of the game that we have.

No country has finer trout streams than has Alberta. During most of the year the water is clear, cold, and running swiftly. These conditions are exactly suited to the needs of our cutthroat and rainbow trout. Each year, the Dominion government has added new stock to the fish in the Bow, Elbow, Highwood, and Red Deer Rivers. They will, no doubt, add stock to the northern rivers when that becomes necessary. In the spring of 1928, fish hatcheries were opened in the Waterton Lakes and Slave Lake districts. The fish hatched in these hatcheries will be turned loose in the rivers and streams of the province and allowed to grow and breed.

In the old days, Alberta was the home of vast numbers of prairie chicken, wood partridge, and wild duck. These birds make fine sport and delicious eating. Of late years, they have decreased greatly in numbers, so that it begins to look as if they may, in time, become extinct. To protect them, the government fixes dates for "open seasons", short periods of the year when these birds may be shot. It is against the law to kill them at any other time. In 1907, some



PROVINCE OF ALBERTA

Calgary sportsmen, seeing that the prairie chicken and partridge were decreasing, took steps to make good the loss. They brought in numbers of Hungarian partridge and turned them loose. These beautiful birds have been increasing ever since and now are found all over Southern and Central Alberta. They make excellent eating, and they are useful to the farmer, for they eat weed seeds and bugs. The sportsmen are now beginning to bring in ring-necked pheasant and to turn them loose also.

Alberta also takes care of her large animals. Deer and moose may be hunted only for short periods each autumn. The hunters must buy a licence to shoot these animals. The licence allows each man to shoot only two deer and one moose in a season. As those who wish to hunt these animals have to take expensive camping trips to reach them, not very many men are able to go. This fact protects the animals.

Buffalo and antelope may not be hunted at all in Alberta. They are kept in large parks where they are allowed to range over the country as they did when they were free. In 1907, the government bought a herd of 750 buffalo from a man in Montana. These were placed in the park at Wainwright, and they now number over 6,000 head. Each summer numbers of them are taken north to Wood Buffalo Park and turned loose. Their numbers are steadily increasing.

Each of our National Parks is a natural game preserve. No one is allowed to shoot in the park. The animals increase rapidly and soon spread beyond the boundaries of the park. In this way our province is becoming each year more richly stocked with wild life.

THINGS TO FIND OUT

1. The dates of the open seasons for:

Prairie chicken ____________________

Wood partridge ____________________

Hungarian partridge ____________________

Ring-necked pheasant ____________________

Cut-throat trout ____________________

Rainbow trout ____________________

Wild goose ____________________

Wild duck ____________________

Deer ____________________

Moose ____________________

Bear ____________________

Fox ____________________

2. What a game licence is. ____________________

3. What rules it lays down for the hunter. ____________________

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4. How much it costs. ____________________

5. Where it can be obtained. ____________________

6. What persons are allowed to hunt without it. ____________________

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SPECIAL NOTES

SPECIAL NOTES

SPECIAL NOTES

SPECIAL NOTES